Digital Project Planning & Management Basics

Instructor Manual

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For
The Library of Congress
And the
Association for Library Collections & Technical Services

(1) Instructor Manual -- (2) Trainee Manual

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Cataloging for the 21st Century

Course 5: Digital Project Planning and Management Basics

Date Place

Instructor:
- Name and affiliation

Schedule

Day 1	*Sessions / Topics*
8:00-8:30	**Registration**
8:30-9:00	**Getting started; Introductions, Orientation and Background**

9:00-10:30	## 1. Introduction to Digital Project Planning & Management
	
	Review the goal of the course
	    o Collaboration within an organization and Partners with outside institutions
	    o Team building and communication skills
	    o Creating a business plan and writing a grant
	    o Managing a digital project
	    o Assessment
	
	## 2. Team building and Communication Skills
	    o Brainstorming techniques
	    o Listening and persuasion skills
	    o "Getting to Yes"

10:30-10:45	Break
10:30-12:00	<u>Exercise 1</u>: Based on the scenario assigned to the group, discuss the issues (5 "w"s) for developing a digital project. Use the brainstorming and communication skills discussed in the presentation
12:00-1:30	Lunch
1:30-3:00	## 3. Making Your Case: Creating the Business Plan - Understanding the connection between the institution's missions and goals and the goals of the digital project - Examine the long term benefits and costs for the creation and sustaining of a digital project
3:00-3:15	Break
3:15-4:45	<u>Exercise 2</u>: Based on scenario assigned to the group, discuss the issues of writing a grant and implementing a project
4:45-5:00	Conclusion of Day 1

Day 2	*Sessions / Topics*
8:30-9:00	**Review previous day; answer any questions**

9:00-10:30	### 4. Planning and Grant writing
	
	    o Overview of the steps of planning a digital project
	    o Examining the information needed to write a successful grant

10:30-10:45	Break

10:30-12:00	### 5. Project Management
	
	    o Overview of the steps of implementing a digital project
	    O Examining the tasks involving a digital project

12:00-1:30	Lunch
1:30-3:00	Exercise 3: Based on scenario assigned to the group, discuss the issues of writing a grant and implementing a project
3:00-3:15	Break

3:15-4:45	### 6. Assessment
	
	    o Quantitative and Qualitative measures of success
	    o Understand the aspects of quality (wayfinding principles): functionality, usability, and accessibility
	
	Exercise 4: Consider what criteria will be used to measure "success" and how to build in the quality and features to reach the goals

4:45-5:00	### Conclusion of Day 2

INTRODUCTION AND NOTES FOR INSTRUCTORS

Introduction

Digital Project Planning and Management Basics is designed for anyone who is interested in the steps in planning and managing a digital project regardless of its scope and size. It is not intended only for staff and librarians in a Technical Services section. It is recommended also for administrators and other personnel who will be actively involved in the process or impacted by it. The content of the course is accessible for individuals in other cultural memory institutions who are planning a digital project. An optimum size of the class is 25-35 participants. The course should be spread over 2 days to maximum the learning process.

Although this is workshop 5 in the Library of Congress series, *Cataloging for the 21st Century*, this course would make a good introduction to the other courses in the series. Workshops 1-4 represent a drilling down or more detailed content introduced in the Planning and Management workshop.

The course should be tailored to the participant needs. It has been suggested that the Team Building module may not be necessary or appropriate for all audiences. Others have suggested more in depth coverage of metadata standards. To meet this demand, an optional module is available which is derived from a presentation developed locally for the Metadata Standards and Applications workshop, the session on specific metadata standards. It is strongly advised that participants attend the other workshops in the series for more detailed guidance.

Instructors should have first hand experience in the planning and management of digital projects as well as grant writing. The exercises and examples may – should – be modified to meet the needs of the audience. It is hoped that as the workshop is taught, examples will be added to the workshop from which instructors can select.

It is suggested that the participants be divided into 3 groups for the exercises. This can be done at the time the participants sign in the first day. Random colored/numbered slips can identify which group the attendee will participate. If the workshop attendance is at least 18-20 participants, then one can also randomly assign roles to the participants: administrator, curator, project supervisor, metadata creator. The assignment should be random to maximize the potential that the attendee will be role-playing from a viewpoint that is not part of their current position.

The handout *Steps for Developing a Plan for Digital Projects* should be given out at the beginning of the workshop to serve as the overall roadmap for the two days.

It is recommended that the slides be printed two per page only. Otherwise, some content may be difficult to read. The workshop hosts and instructors may decide whether to print 2 sided or not to save paper.

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Digital Project Planning & Management Basics

Section 1
Introduction:
Background, Goals, and Course Outline

Course design: Mary S. Woodley, CSU Northridge

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Instructor notes:

Introduce the instructors and ask the attendees to introduce themselves and provide information about themselves:

•Institution

•Position

•What they hope to learn from workshop

Describe the contents of the trainee manual:

•Table of contents

•Examples

•Exercises

•Glossary

•Bibliography

Cat21 Series Objectives

- To equip catalogers to deal with new types of resources and to recognize their unique characteristics
- To equip catalogers to evaluate competing approaches to and standards for providing access to resources
- To equip catalogers to think creatively and work collaboratively with others inside and outside their home institutions
- To ensure that catalogers have a broad enough understanding of the current environment to be able to make their local efforts compatible and interoperable with other efforts
- To prepare catalogers to be comfortable with ambiguity and being less than perfect
- To enable practicing catalogers to put themselves into the emerging digital information environment and to continue to play a significant role in shaping library services

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Instructor note: Place this workshop in the context of the workshop series

Other workshops include:

- Rules and Tools for Cataloging Internet Resources

- Metadata Standards and Applications

- Principles of Controlled Vocabulary and Thesaurus Design

- Metadata Digital Library Design Overview

- Digital Project Planning and Management Basics (This workshop)

Workshop Goals

- Learn basic steps in planning a digital project
- Review grant writing for digital projects
- Understand basic management issues
- Explore assessment goals and tools for measuring success

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Intructor note:

Steps in planning a project closely parallel the content that is necessary to know for writing a successful grant for a digital project

Workshop Objectives

- Create a project management roadmap
- Understand needed for collaboration and team building (for both intra- and inter-agency collaboration)
- Learn the skills need to develop a work plan and grant writing
- Develop criteria for assessment and selection of tools to measure success of a digital project

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Instructor note: Add the following

What is not covered in this workshop:

1. Details about standards of metadata and scanning
2. Details of metadata, vocabulary control, and technology management
3. These are covered in other workshops in the series

Outline for this Workshop

Section 1: Introduction

Section 2: Team Building and Planning

Section 3: Development of a Business
Plan or Making your Case

Section 4: Planning and Grant Writing

Section 5: Project Management Issues

Section 6: Evaluation & Assessment or How to
Measure Success

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Why Digitize?

- Provide better access
- Added value to resources
- Preserve fragile materials
- Support educational and research activities
- Fulfill strategic mission and goals of institution

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Instructor note:

Provide better access to resources that would otherwise be unknown and underused

Added value to resources, provide content to documents or visual material that has no related textual information (e.g., photographs in an archival collection)

Preserve fragile materials (less physical handling means better long-term preservation of fragile material -- you still need to preserve the original material

How would a digital project fit into the institutions' mission, what goals would this meet?

Types of Digital Projects

- Special and Archival collections
- Reformatting content from other non-print resources
- Born digital projects
- Digitization projects in a consortium

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Instructor note:

Special and Archival collections

Collections within the institution that represent unique or rare objects

Collaborative projects bringing together disparate but complementary resources

Reformatting content from other non-print resources

Newspaper and magazines (no longer under copyright) scanned from microforms

Slide library converted to a digital library

Digitization for commercial purposes

Institutional repository material made available for a fee or subscription (scholarly publishing: archived material or current)

Define the Project :
Who, What, When

- **Who is the audience?**
  - Primary audience?
  - Secondary audience?
- **What is digitized?**
  - What should/could be digitized?
  - Priorities?
  - Who decides the priorities?

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Instructor: print out separately if needed. Ask a series of questions before writing a grant proposal, do your research up front. Grant proposals are more likely be awarded when the questions on the proposal are

accurately and completely answered.

•Who is the audience, who will be served by the digital project

•Scholars, university students, K-12 educators and or students

•Anyone with access to the web, including the general public

•What resources should/could be digitized and the priority

•Prioritizing can be tricky

•How much: everything in all the collections, representative samples, what is expected in high demand, Clifford Lynch (footnote):

•material not in high use importance and use might increase once digitized and made known/available

Define the Project :
How and How Much

- How much do you digitize?
  - All or representative samples?
- When will the project start?
- What is the timeline?
- How will the project workload be supported?
- Long-term plans (sustainability)

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Instructor notes:

•When will the project start and is it a finite project or ongoing

•How will the project workload be supported

•Outsourcing

•Issues with the transportation of fragile material

•Standards followed

•In-house costs of labor/benefits/equipment software

•Develop software tools or buy vendor product

•What software is good enough (and what do you mean by good enough)

•Training and staff time (hire new staff, who does the work of permanent staff while working on project)

•How will the institution plan for long term maintenance of the digital collection

•Where: space where to put people and equipment; ideally should have environmental controlled for scanning

Steps in the Process

- Identify the key players
- Conduct an "information audit"
- Have a clear idea of management's vision
- Create a planning team who will be responsible for research, planning and writing the grant

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Instructor note:

Sometimes the library has a specific idea already in mind, however, you may be at the beginning of the process and not have a clear idea where to start

Besides an inventory of the type material you have in your collections and prioritizing them, "inventory" your human assets I.e., find out who might have the

•skill sets

•time

•interest to implement the project

•Born digital -- do not need to worry about a conversion unless the digital format is not acceptable

Collaboration and Team Building

- Negotiation skills
- Listening and coaching
- Influencing and persuasion skills
- Group decision-making
- Appropriate technology tools

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Collaboration and team building (for both intra- and inter-agency collaboration)

Not everyone will be equally enthusiastic, resistance may be reflected in attitudes:

1. More hype than content
2. Everyone is already stretched, how can we take on yet another responsibility
3. Quick start: proof of concept so other organizations are willing to come on board
4. Establish clear leadership who is the focal point, authority to make things happen
5. Consensus building does not mean full agreement

Grant Writing and Work Plan Development

Grant writing and development of a feasible work plan includes:

- Realistic expectations
- Identification of grants and agencies
- Writing a successful grant proposal

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Instructor note:

Realistic in terms of staffing, how much time it will take, in other words the

Matching project with granting agency is important

Plans for Assessing the Success of the Digital Project

1. Steps to follow
2. Requirements / criteria for measuring success
3. Evaluation tools and techniques
   - Choosing the right tool
   - Knowing how and when to design a local tool

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You need to consider how you plan to assess or measure your success before you start your digital project. Need to tie results to the goals

Last slide:

Take questions from the participants and generate short discussion if their institutions have addressed outcomes and metrics. Metrics directly tied to goals of digital project. Points covered in more detail later.

Digital Project Planning & Management Basics

Section 2:

Team Building and Planning

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Goals of the Teambuilding Section

- Understand the process for team building
- Learn how to effectively plan and develop ideas through the team
- Learn how to effectively negotiate when parties disagree
- Understand the importance of building consensus -- working together towards the same goals

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Leadership: need to assess skills of the team, what each team brings to the table; are all the skills present, do you outsource or allot time for training

Cooperation, Collaboration & Partnerships

Success of projects depends on developing a core team of stakeholders

Stakeholders may be part of the institution, parent institution, or partners in the project

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Stakeholders: anyone (person or corporate) that may influence of be affected by the outcome of the project

Some granting agencies favor collaborative projects where several institutions participate to develop a digital collection

Knowledge or skills come from other

Inter and intra institutional projects, different dynamics; some have larger stake, resources available, and may expect different responsibilities and results.

Institutional MOU between parties so everyone has clear idea of their role

Potential Stakeholders / Team Members

- Digital project director
- Grant writer(s)
- Curators
- Project manager
- Specialist in metadata creation
- Specialist in scanning standards
- Conversion specialist

- Hardware / software developer or procurer
- Web page / interface developer
- Marketing and promoter of project
- Staff responsible for the tasks of implementation
- Assessment specialist

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In some cases one person will wear several hats. Each of the members involved will have primary responsibilities but they need to work together in order to complete the project "successfully." How to define "success" comes later

Director: who is the primary contact for the granting agency and who is ultimately responsible for the project

Grant writer could be a team, some designated as the point of contact with granting institution

Curators: who is deciding what content is digitized and developing the policy of selection / recommender

Project manager: who is responsible for developing a business plan, a project roadmap, implementation, assessment

Who is going to create the best practices of the metadata and scanning to ensure sustainability and interoperability?

Even if you purchase out of the box software, Web pages need to be developed to support the project

Who will tell the world about your project, do not rely on the "field of dreams" model: "build it and they will come"

Staff will be instrumental in developing the workflow and alerting the rest of the project when things do not work out as planned.

Staffing

Every project will vary

**Not shown on this page:
Heritage Network members
of partnership**

Project Staff

Project Director	Tony Gardner, *Curator of Special Collections and Archives*
Project Manager	Robert Marshall, *Head Archivist*
Metadata Librarian	Mary Woodley, *Librarian*
Project Archivist	Charla Bench
Project Technician	Diane DeSha
Metadata Specialists	Rachael Gordon, *Librarian*
	Adina Lerner, *Librarian*
	Sally Mendelsohn, *Admin. Support Ast.*
	Lori Sapradra, *Librarian*
	Jina Wakimoto, *Librarian*
	Annie Zeidman, *Librarian*

Library Administration

Dean	Susan C. Curzon
Associate Dean	Susan Parker
Project Publicity	Cindy Ventuleth, *Director of Development*
	Joyclyn Dunham, *Development Assistant*
Systems Administrator	Eric Willis
Web Designer	Hai-Ling Tang, *Library Assistant*

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Instructor note:

Example from the CSUN LSTA project staff.   Should show instead or in addition any example relevant to the audience

Instructor note:

May substitute local examples

Plan Meetings to Discuss Impacts on Organization

- Impact on institution
  - Impact on staffing
  - Impact on space, equipment, software
  - Impact on workflow / routines
- Impact on relations with other institutions, organizations
- Selection process

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Instructor notes:

Who will be involved in the process

Decisions about software / hardware

Outsource / temporary staff

Temporary staff to release current permanent positions so that they

Brainstorming

- Effective tool for hearing multiple viewpoints, issues, and general ideas
- Leads to the development of more specific ideas and solutions to issues

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Instructor notes:

A vehicle for getting buy-in from the different players. Section may be trimmed down depending on audience

Brainstorming Techniques
Useful for:

- Supporting institutional SWOT analysis
  - Strengths
  - Weaknesses
  - Opportunities
  - Threats
- Scope and nature of projects
- Selection

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Instructor notes:

Possibly not appropriate for discussing metadata implementation but more appropriate for the "gray" area, creative problem solving

Environment for Brainstorming

- Create a relaxed and non-threatening atmosphere
- Decide if all staff involved or representatives from various departments
- Suggest that if representatives are only participants, that the representative meets with constituents to collect ideas, issues, viewpoints

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Brainstorming Rules

- Select a facilitator (sometimes using an outsider has an advantage – facilitator does not have a vested interest in the results, or influences or directs the discussion)
- Write down all comments
  - No evaluation of ideas
  - Everyone has an opportunity to speak
  - Use flip chart, white board or software to record comments

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Brainstorming Process

1. Define ideas or problems
   - Rephrase idea to make sure that everyone understands the point; write it down concisely
2. Break down broad issues into smaller issues to be "brainstormed" separately
3. Time limit for each section
4. Select the most important issues

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Instructor notes:

Set up the rules for the session. They should include:

•letting the leader have control of the process but does not dictate

•allowing everyone to contribute.

•ensuring that no one will insult, demean, or evaluate another participant or his/her response.

•stating that no answer is wrong.

•recording each idea unless it is a repeat.

•setting a time limit and stopping when that time is up.

http://projects.edtech.sandi.net/staffdev/tpss99/processguides/brainstorming.html

http://www.brainstorming.co.uk/

http://en.wikipedia.org/wiki/Brainstorming

Building a Consensus

Review all ideas presented then refine by:

- Look for items that duplicate each other
- Combine related concepts
- Narrow list down
- Work towards a consensus: find common ground

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Instructor note:

Clustering of ideas. Make sure people are in agreement that the concepts are duplicative and are related

Ask each person to vote for the topic / problem

"Getting to Yes"*

- Decide issues based on their merit
- Look for options that will lead to mutual gains (win-win)
- Avoid arguing from positions
- Focus on the issues/interests, not the people
- Use objective criteria

*By Roger Fisher, William Fry, Bruce Patton. Harvard Negotiation Project

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Arguing from position: its my way or the highway: inefficient, creates hard feelings

Objective criteria instead of what willing or not willing to do

Stages Getting to Agreement

1. Analysis stage

    Gather, organize, consider information from all sides

2. Planning stage

    Evaluate the information, think of options

3. Discussion stage

    Communicate interests & options

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Instructor notes:

1. The first stage is determining the situation taking into account the emotions, vested interests of everyone at the table.

2.   The planning stage may include brainstorming ideas for resolution, again focus on the issues not the people. Create options

3.   Make sure everyone understands the interests and goals of each other. Avoid language that is loaded or evaluative

Active Listening Skills

1. Hear the message
2. Interpret the message
3. Evaluate the message
4. Respond to the message

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Tips for Effective Listening

- Take notes (locate key points)
- Reflective listening
- Focus on listening
- Build rapport with speaker
- Show respect

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Instructor notes;

Reflective listening : Repeat back what you heard to make sure you heard what they said

What Blocks Effective Communication?

- Evaluating
- Advice-giving
- One-upmanship
- Diagnosing, prescribing
- Prying

- Warning
- Lecturing
- Shaming
- Withdrawing
- Lack of trust

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Communication Break Down

Causes

- Competing agendas
- Concern about long-term support
- Partners lack of skill sets to equally share responsibilities
- Partners fear cultural material will be damaged or lost if "loaned" to lead institution

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Instructor note:

I am sure no one has every experienced this in the institution where they work. Feel free to use the example below or one from your own experience.

San Fernando Valley History Digital project was created through a consortium of the Oviatt Library and local historical societies who needed constant reassurance

that we were not keeping their material and that it would be handled carefully and not lost

Revisit Decision process

- Start over
- Change management-add Sue Curzon's diagram

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Exercise 1:
Learning Objectives

1. Practice brainstorming techniques and negotiation skills
2. Experience working in a team

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Digital Project Planning & Management Basics

Section 3:

Developing the Business Plan or

Making Your Case

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Goals of Section

- Understand the process of developing a business plan and the role of the business plan in the overall planning process
- Learn the components of a business plan

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2

Planning Process*

Component	Description
Internal Constraints	Organizational mandates
SWOT analysis	Strengths, Weaknesses, Opportunities and threats
Mission	Institutional purpose & values
Strategic Plan	Within mission, set realistic goals and objectives / activities
Stakeholder analysis	"Entities" who have a stake in the results
Business Plan	General description of implementation
Operating Plan	Specifics of business plan for given period
Vision for success	How the organization will look when plan is implemented

*Based on Bishoff and Allen (2004)

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Organizational mandates may include activities that must be maintained as well as limits concerning the size and scope of the project (space for project staff, for example)

Entities is used because its just not individuals but other "departments" or institutional players

The business plan is the overall plan, the daily operations come under the operating plan

See one page handout

What was discussed in the previous sections were at the level of the strategic plan. A business plan deals with more specific goals and actions: stakeholders, outcomes & products

Components of a Business Plan

The business plan needs to address the following issues:

- What is the need?
- Who is the target audience?
- How is the digital project the best solution?
- What will be the impact on the institution?

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Components of a Needs Analysis

- Determine types of data needed
- Collect and analyze data
- Describe how the digital project is a solution

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Instructior note:

Bullet points explained in following

First step in creating a business plan or describing the need or a gap is to identify what issue you want to resolve with the project, there are no right answers, but without a clear idea of what you want to accomplish, it will be difficult to measure your "success" or if you are providing content that end users want or need

Types of Data Needed

- Who is your target audience?
- How are their needs being meet, or not?
- Where are the gaps in service, in content?
- What audience skill, knowledge, or behavior can be improved?
- Environmental scan of what other projects

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How to Find or Discover Data

- Use US Census statistics
- Use Library statistics
  - Size and scope
  - Use statistics
  - Reference desk statistics
  - Published studies
- Surveys
- Focus groups

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Audience & Needs Gap
example

The San Fernando Valley, which makes up fully 80 percent of CSUN's service community, is quite diverse ethnically, linguistically, and socio-economically. On the weekends, about 50% of the Library's service requests are by persons who are not affiliated with CSUN such as high school and elementary school students, local historical groups, and individual members of the local business community. [CSUN's] Special Collections and Archives …contain extensive collections that document the history of the San Fernando Valley through a mixed media of rare illustrated items, drawings, photographs, brochures, pamphlets, maps, official and unofficial reports and studies, personal letters, oral remembrances and related records.

Both the CSUN undergraduate students and the K-12 students seek primary source material about their neighborhood, history of the valley, and history of California missions. It is difficult for them to find reliable information.

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Instructor note:

May replace with local example of accepted grant

In this case the need was identified by the questions asked at the Reference desk at CSU Northridge, as well as identification of the classes with the assignment by reviewing new course proposals. CSUN identified a number of courses (Urban Studies, Marketing, History, courses for transfer students) which require students to create a profile / description of their neighborhood. The profile can be partially based on census data, supplemented by descriptive or historical information. However, local histories do not exist for all neighborhoods, and the ones which are available may not be reliable.

Benefits of Solution

- Describe the solution
- Detail the benefits
- Describe how the solution will close the gap
- Calculate the cost of the solution

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Benefits of Project

example

The San Fernando … Digital Library opens accessibility to an unlimited number of client and user groups … including scholars, teachers, students, local historical societies, and members of the community, material otherwise accessible only by on-site visits. The project will:

- Open holdings to a wider audience
- Heighten interest in the historic development of the Valley
- Provide primary source materials for K-14 classroom use
- Link historical collections throughout the Valley

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Instructor note:

May replace with local example

Why Digitize?

✓ to support collection management and preservation

✓ to make information and assets more readily available

✓ to provide material for educational programs and address curriculum needs

✓ to provide material for curators and researchers (internal and external)

✓ to eliminate redundant work, and creation of redundant assets (photographs, slides, digital images, etc.)

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Instructor note:

This is a repeat of slide from section 1, adding it to the context of the business plan.

Preservation issues and documentation is critical for resources in private or less formal collections which may have already sustained damage (kept in garages, damaged by water, smoke, neglect) or exist insecure environment

Remember to tie benefits with overall reasons for digitization delineated in the previous sections. How does the digital project fill the gap.

Presenting your Case

"Selling" the project to internal staff, library administrators, campus administrator or governing boards. All may need to hear different content

Explaining the uneasy part without putting people off:
    Labor
    Time
    System support

Explaining what the project is using the right amount of information: products developed

Managing expectations

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Instructor note:

Know your audience. When selling your project to upper management (even if it was their idea), they may not want to hear the nitty gritty details. Packaging information for a specific audience is an art. Practice your presentation to someone who has a similar knowledge base.

Selling your Project

How does the project help fulfill institutional mission & goals

- ✓ Supports community outreach & public relations
- ✓ Increases user base
- ✓ Increases revenue (through commercial profit but also through donations)
- ✓ Creates more efficient workflow
- ✓ Helps preserve original materials (less wear & tear)
- ✓ Supports educational function of institution

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Instructor note:

Success opens many doors, "failures" can close them. The word "failure" is scary to some. Failure in this context: not meeting the goals of the project, especially the goals expressed in the grant

Presenting the Costs to Your Administration

- Include a succinct statement of project goals
- Clearly state which (original) collections will be included
- What equipment is needed
- Staffing—how many, and what skill sets?
- Hidden costs: "marketing," benefits for new staff members, grant management costs
- In-kind costs (e.g. staff release time)—effect on other projects
- Maintenance—"care and feeding"

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Maximize success to know what you are getting into

Maintenance: Sustainability

Cost benefits

"There are no short-term cost savings to be realized by digitizing collections"

Hughes, Lorna M. (2004). *Digitizing collections: strategic issues for the information manager*. London: Facet. p. 7

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Instructor note:

This is important to emphasize, it is a difficult sell, but honest

1. Digital initiatives require a high start up costs;

2.   Digital environment is not static

- Technology is always changing

- Replacement of hardware

- Software changes impacts how content is stored and retrieved.

- Changes in metadata standards, harvesting and search protocols need to be addressed, potential migration in the future

- Long term preservation issues surrounding the digital surrogates, scanned digital objects and metadata;

3.   long term cost of human involvement

Factors to Consider

Every project is unique, costs will vary depending on:

- scope and material of the project
- staff and equipment costs
- database development

Data migration is not a "once-in-a-lifetime" thing, but rather it is ongoing

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Criteria for Evaluation

- Feasibility
- Legal issues
- Costs / benefits
- Scope / nature of material

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Categories of Cost

- Operational
  - Hardware/Software
  - Training
- Organizational
  - Release time
  - Space
- Staffing

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Hardware may include computers or server space

Release time: the institution is devoting a % of an employees time to the project, the % of the employee's salary & benefits considered "In-Kind" costs by the institution

Relative Costs

Table 6: Comparative Cost Ratings Based on Overall Average Projections

Digitization Category	Digitizing	Metadata Creation	Other	Overall Costs
Mixed Collections	Higher	Slightly Higher	Lower	Slightly Higher
Single Items	Lower	Slightly Higher	Higher	Higher
Photographs	Slightly Higher	Lower	Average	Lower
Books/Pamphlets	Lower	Lower	Lower	Lower
Re-keyed Text	Lower	Lower	Lower	Lower
OCR	Very Low	Very Low	Very Low	Very Low

NO

OCR to meet ADA standards is more labor intensive than this
represents

Puglia

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Although the numbers provided by Puglia are dated, the relative costs have
remained stable

Single items: homogeneous collection

OCR is listed as very low, but as a warning to OCR and meet ADA
standards is more expensive and labor intensive than just mass digitization
with OCR

This table also does not address migration of data stored in a FileMaker Pro
or Access database. Although it might be cheaper than re-keying the data
(especially if it is a large collection), the labor will be in the mapping and
writing scripts to migrate to a new format. The more complex the original
database, the more difficult it will be to migrate. If migrating to a database
using Dublin Core, information may be lost or less accessible if the
granularity of the two are not comparable. Clean up may be more expensive
than re-keying if the fields do not migrate as expected, if information was not
consistently recorded in the fields, if the diacritics were not compatible. Etc.

Reported Cost Ranges

Table 5: Reported Cost Ranges for Various Digitization Processes

Digitization Category	Digitizing	Metadata Creation	Other	Overall Costs
Overall Projections	$0.25-$19.80	$0.75-$34.65	$0.45-$50.20	$1.85-$96.45
Adjusted Projections	$0.25-$16.65	$0.75-$17.25	$0.45-$28.15	$1.85-$42.45
Mixed Collections	$3.45-$16.50	$2.85-$17.25	$4.50-$21.55	$3.25-$40.50
Single Items	$1.90-$8.00	$5.75-$12.85	$7.60-$28.15	$23.10-$35.80
Photographs	$2.30-$16.65	$4.85-$6.45	$3.35-$24.65	$5.20-$42.45
Books/Pamphlets	$2.10-$6.10	$1.50-$11.10	$1.35-$6.90	$4.60-$14.40
Re-keyed Text	$2.55-$5.00	$2.35-$5.70	Limited Data	Limited Data
OCR	$0.25-$3.60	$0.75-$2.40	$0.40-$2.10	$1.85-$7.65

Puglia 1998

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Instructor note:

SFV project for the first year: $200,000 (grant 153,000 – the rest in-kind):
result 2200 images and descriptions ($90.00 per image) sounds like a lot but
the first year has the steepest learning curve and start up costs, if amortized
over years, the price reduces.

In-House and Outsourcing: Various Combinations

- Permanent staff assigned, equipment purchased, software developed locally
- Temporary staff hired, equipment purchased, software developed locally
- Permanent and temporary staff employed, hardware purchased, software "subscription"
- Scanning and metadata creation performed by vendor

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Instructor note:

A level of expertise to evaluate vendor requirements and responses is needed even when outsourcing (do they really understand the requirements)

If the library lacks realistic expectations of are unclear about their goals and objectives, then it will be difficult to articulate your expectations to the vendor

Staffing

- Work that can be outsourced:
  - Database development
  - Scanning
  - Transcription of audio (e.g., oral histories)
  - Basic tagging (markup) for TEI, or EAD in XML)

- In-house labor issues:
  - Release time ("in kind"), duties performed by temporary help?
  - Time supported by grant, duties performed by temporary help?
  - New staff hired for project

  Labor costs represent the largest percentage of costs in a digital project

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Staffing Costs

- Salaries
- Benefits
  - Health
  - Sick Leave
  - Vacation
  - Holidays
- Training
- Attendance at conferences and meetings

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Instructor note:

Hiring temporary project staff savings: retirement is usually not paid

Hardware

- •Scanners
  - •Slide scanners
  - •Flatbed scanners
  - •Microfilm/microfiche scanners
- •Digital cameras
- •Audio/video conversion
- •Server for storage/delivery
- •Server for streaming audio/video
- •Long-term maintenance/replacement

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Instructor note:

Add in the cost of the documentation of how to use the hardware

Software

- In-house database development:
  - Requires skilled programmers
  - How and by whom will the system be updated, enhanced, and maintained?

- Purchase of an off-the-shelf product:
  - Is the vendor reliable, responsive, and likely to stay in business?
  - Are funds (and staff liaisons) available for system enhancements, updates, and ongoing technical support?
- **Documentation of decisions made, code written**

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Instructor note:

Emphasize that communication between IT and librarians concerning specs should be open and clear, define terms -- practice good communication skills. If terms are not understood, ask for clarification.

Vendor Selection

- Visit website whose "product" you would want to emulate
- Take note of the solutions the project used to create the digital product
- Make a list of desired features & prioritize them
- Decide what features are necessary and what you may not be able to afford

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Timeline

- Environmental scan of IT solutions
- Issue RFP
  - Deadline when due
  - Follow up questions
  - Evaluation of responses
- Short-list vendors
  - Site visits
  - Interview current (and past) customers
  - Vendor presentations
- Identify preferred vendor
- Award contract

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Request For Proposal (RFP)

- User requirements
- System or technical requirements
- Functional requirements
- Interoperability with other OS / platforms

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Instructor note:

Tender

What does current system do; what must it do; what you would like it to do

Is it compatible with "metasearching = federated searching = cross repository searching"

RFP Assessment

- Does the proposed solution meet all the stated requirements?
- To what degree do they meet your ideal solution?
- Contacts and business history
- What support do they provide (e.g., in-house training)?
- Costs/prices clearly delineated
- How well do they communicate with their customer base

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Requirements and preferred solutions need to be weighed: do all requested functions the same in importance?

M= Mandatory

D= desireable

I = request for information

Points to Remember

• Keep the IT solution in sync with the stated
goal of business deliverable

• Link the "business case" to the goal

• Keep the stakeholders informed of the process

• Remain flexible -- it's a dynamic environment

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Collaborative Digitization Project
http://www.cdpheritage.org/digital/index.cfm

Website provides information about:

- Digital imaging vendors
- Preservation resources
- Software resources
- Technical resources
- Strategic planning documents
- Project manuals and presentations and more

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Other Useful Web Sites

TechSoup.org

Technology resources for nonprofits

http://www.techsoup.org/

Technical Review (MIT)

Articles on technology, broader than digital libraries

http://www.technologyreview.com/

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Exercise 2

- Attendees work in teams
- For each team scenario, think about the issues involved
- Goals of exercise:
  - ✓ Practice brainstorming techniques
  - ✓ Discuss the staffing considerations for each scenario
  - ✓ Discuss hardware and software options for metadata creation and presentation
  - ✓ Appoint a spokesperson to report back to the group

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Digital Project Planning & Management Basics

Section 4:
Planning and Grant Writing

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1

Goals of this Section

- Learn the basics of grant writing
- Understand the connection between planning and grant writing
- Learn how to write an operational or implementation plan

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2

Parallels between Planning and Grant Writing

- Clearly articulated goals and objectives
- Succinct description of the content to be digitized and its relevancy to achieving the goals
- Realistic estimates concerning time, costs, staffing and IT
- Knowledge of the appropriate metadata and scanning standards
- Plan for implementation: workflows
- Defined criteria to measure success

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3

What information is needed to articulate the goals and objectives. Emphasize to the attendees the importance of setting realistic goals. One needs to take into account the learning curve, even if you have done projects before -- every project is different and may unexpected issues. Always assume things will take longer than the "ideal" schedule.

Grant Writing Team

- Who are the key players for writing the grant and their responsibilities?

- What is the role of the Development Officer and a University "Corporation"?

- What is the role of the Library Director/Dean in the process? Technical Services & Cataloging staff?

- Whom can you consult with for feedback about the process?

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4

Instructor notes:

Who are the key players for writing the grant? What are their responsibilities?

Is there a Development Officer in the library? Is there a University "Corporation" or Grant Office who will be part of the grant management if awarded? This entity will require a percentage of the grant to cover the expenses of managing the grant.

What is the role of the Library Director/Dean in the process? Technical Services & Cataloging staff?

Who can you consult with for feedback about the process?

Remember! When Applying for a Grant …

READ THE DIRECTIONS!

MAKE SURE THEY FUND THE TYPE OF PROJECT YOU ARE PROPOSING!

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Instructor notes:

Make sure that you have answered the questions appropriately. Grants are reviewed by multiple readers, they will notice if you have not addressed the questions. Make sure the granting institution provides funds for your type of projects

Proposal Components

Components of a Grant Proposal

- Letter of transmittal
- Title page
- Table of Contents
- Summary/Abstract
- Introduction
- Statement of need

- Goals / outcomes
- Work plan
- Evaluation / Assessment plans
- Budget
- Sustainability
- Marketing

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Proposal Summary

Concise statement includes:

- Who you are
- What project you are requesting funds for
- How the project relates to the mission of the organization
- How much funding is required

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Introduction to Proposal

- Describe the institution and its community
- What is the significance of the content you plan to digitize
- Does your institution have a track record with grants? With digital projects?

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Example of Library Description
(abbreviated)

The University Library is at the heart of the CSU Northridge (CSUN) campus. The building is 235,000 square feet … The Library is staffed by 23 full and part-time librarians, 51 technical and research specialists, and 250 student assistants. With over 1.2 million volumes, 3 million microforms … and an extensive historical of collection of mixed media, rare books and archives …

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Example of Description of the Wider Community (abbreviated)

CSU Northridge (CSUN) is a public University, located in the San Fernando Valley, in the north west section of Los Angeles. As the only major university in this area, CSUN also serves the adjacent incorporated and unincorporated urban and rural areas … The San Fernando Valley is quite ethnically, linguistically, and socio-economically.

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Instructor note:

The original is much longer. Feel free to use your own examples.

Statement of Need

- What need will be addressed?
- What is the significance of the project?
- Why the need matches funding institution's mission

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Audience & Needs Gap

The San Fernando Valley, which makes up fully 80 percent of CSUN's service community, is quite diverse ethnically, linguistically, and socio-economically. On the weekends, about 50% of the Library's service requests are by persons who are not affiliated with CSUN such as high school and elementary school students, local historical groups, and individual members of the local business community. [CSUN's] Special Collections and Archives …contain extensive collections that document the history of the San Fernando Valley through a mixed media of rare illustrated items, drawings, photographs, brochures, pamphlets, maps, official and unofficial reports and studies, personal letters, oral remembrances and related records.

Both the CSUN undergraduate students and the K-12 students seek primary source material about their neighborhood, history of the valley, and history of California missions. It is difficult for them to find reliable information.

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Example of Solution to Need

" The goal of the Digital Library is to provide full, open, and equal access to a wide variety of primary research materials about the socio-economic growth and cultural evolution of the Valley, from its earliest foundation, to its explosive growth post World War 2."

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Instructor note:

Again, feel free to use any example from a successful grant proposal.

Goals / Objectives of Project

- How does project meet the mission of the institution?
- How does the project provide a solution to the need stated earlier?
- Who is involved?
- Who is being served?
- Is it realistic or overly ambitious?

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Example of Goal or Objective Statement

"When completed at the end of the first year, the project will have digitized a minimum of 2,400 images and related historical records and textual documentation into the San Fernando Valley History Digital Library."

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Project Work Plan

- ■ What is the quantifiable goal?
- ■ What is the work plan to accomplish project?

    Timeframe
    Space
    Equipment
    Staffing

    Software

    Metadata

- ■ How do the methods compare to other similar projects?

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This is a description of the project management laid out:

What are the activities

What technology will you be using; in-house or outsourcing

Staffing: in-house or outsourcing

Public relations

Digital Life Cycle

- Activities surrounding the creation and maintenance of digital objects
  - Sequential
  - Parallel
  - Iterative

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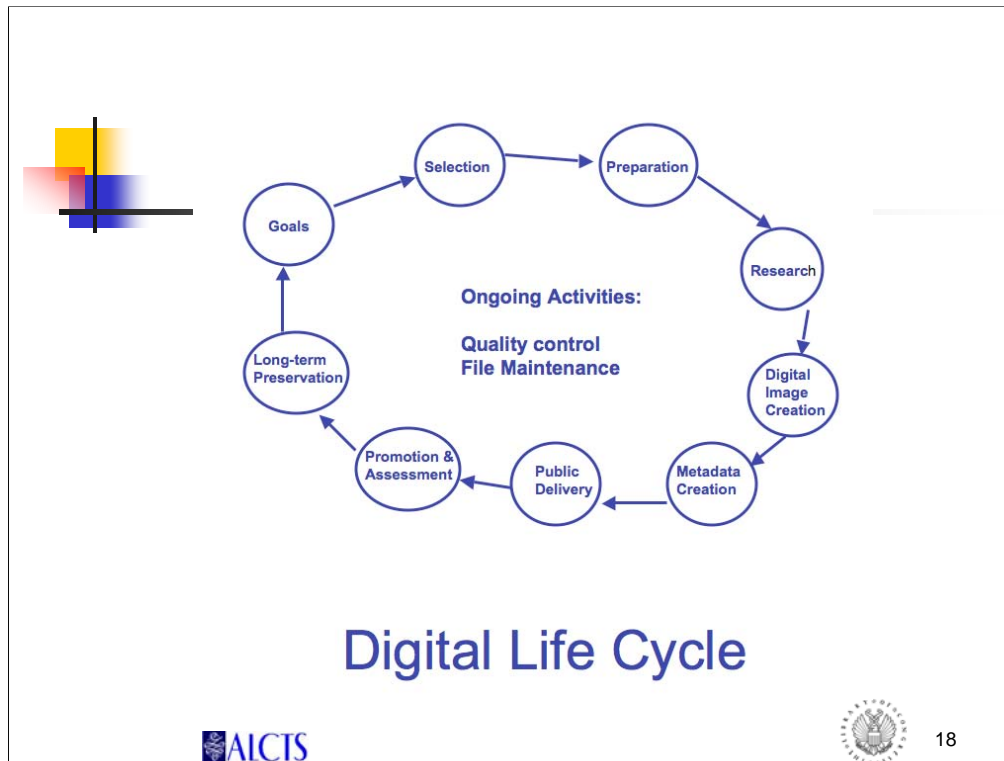
Digitization Issues

- Metadata standards
- Digital standards: imaging and file formats
- Delivery of digitized content
- Rights management
- Preservation

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Metadata creation: what standards; interoperability

Example of Standards Statement

The … Digital Library will conform to [*State]
Digital Library. Digital Image Format Standards*
(2001) for documents, photographs, graphic
material, oral history transcripts, and related
items. The [*State] Digital Library. Digital Object
Standard: Metadata, Content, and Encoding*
(2001) and the guidelines established by Dublin
Core will be followed to support retrieval, storage
and migration of data resources. *Describing
archives : a content standard*. (2004) will guide
the library cataloging of finding guides and related
indexes to archival collections.

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Print out as full sheet

Metadata Standards:

DC: Dublin Core

MODS (Metadata

Cataloging Cultural Objects (equivalent to AACR2 for cultural heritage institutions)

"V" = VRA = Visual Resource Association: metadata set based on CDWA (categories for Description of Works of Art) developed by slide librarians

Markup languages

EAD (Encoded archival Description is an XML based transmission standard)

MARC21

METS (Metadata encoding Transmission S)

Xmetal one of several editing tools tfor createing XML tags according to a specific DTD like EAD

ADOBE = pdf creation and scanning (photoshop)

LizardTech = software that allows high resolution images for the web (Zoom capability without pixalation)

ContentDM = metadata creation tool and provides public display of content (now solely distributed by OCLC)

Why go to the trouble to follow standards?

Interoperability

Sustainability

With Permission, Murtha Baca

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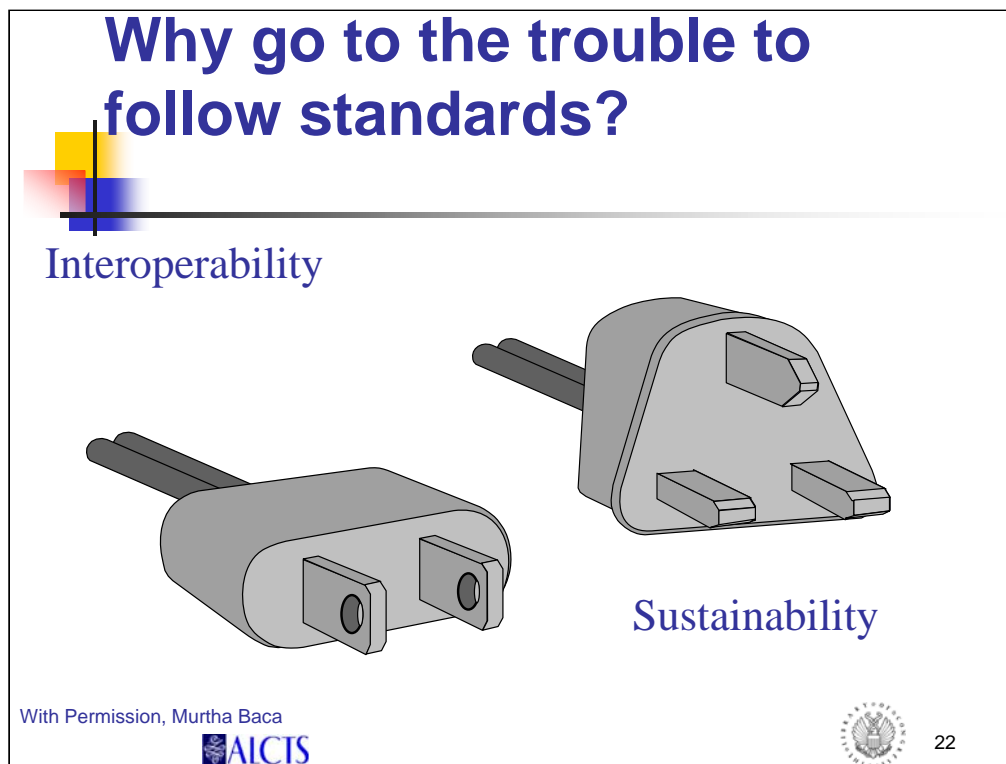
Understand what standards are appropriate for this project, an be to articulate why the standards were chosen for your project. The different standards will be briefly reviewed in the next section.

The Use of Metadata Standards Facilitates...

- Data mapping
- Data migration and preservation
- End-user access
- Interoperability
  - participation in union resources
  - OAI harvesting
  - cross-repository searching

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Instructor notes:

Data mapping: Are you reusing "catalog" records as the basis for description of the digital object but the repository chosen for the project only supports Dublin Core? Then you will need to review the crosswalks (a visualization of where a field from one standard should map (activity) when the data is processed

Data migration: All libraries know that systems change and more often than we like, libraries change the system (ILS for example) that they use. Consistent use of a standard (AACR2rev, RDA, Dublin Core, etc.) will facilitate moving between systems

End Users: Consistently used controlled names and descriptions makes the identification and access to a resource much easier for the end user

Interoperability: Interoperability or the communication between systems is far more effective when data is consistently, added to the same field (author in the author field, using the same or similar content rules (For example, Lastname, FirstName; distinguish between the main title and secondary title information); the most difficult to achieve: the granularity or specificity of the content is the same. Interoperability is of particular importance when the records are going to collected and added to other library holdings, whether it is a "union catalog" (California Digital Library is a type of Union Catalog) or if you allow other digital service providers "harvest" your data for reuse; or if you plan to search multiple databases simultaneously (the OPAC, a specialized index, the digital repository)

Documentation

To ensure consistency in the current project and in the future, the project team must develop a suite of documents:

- for workflow
- for cataloguing policies and procedures, data standards, etc.
- for system (e.g. CMS, DAM) usage, data integrity, reports, etc.

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Instructor note:

All to often documentation is put on the back burner, too time consuming, but it is imperative to document all aspects of the digital project process and activities. If a script to migrate data from one platform to another was time-consuming (for example, from FileMakerPro to a DAM), then it is a waste of valuable staff time to figure it out again for the next load, or figure out why the migration did not work as planned.

Measurable Objectives & Project Actions Timeline

1. Review {number} of historical documents for possible inclusion

2. {number} of documents will be digitized and incorporated into a searchable database that is Internet accessible

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Instructor note:

Best to have position descriptions ready so that once you have the grant you can start the hiring process immediately, if you are hiring outside temporary project staff. This always takes longer than expected

Example of a Goal Statement

In the first year, the project will make freely available to the academic community as well as the community at large, 1400 digital objects accompanied by full descriptions. These digital objects will directly support general interest in the fauna of the valley as well as K-12 biology courses. The school district will create 6 curriculum packages based on the digital objects and state curriculum standards.

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Instructor note:

Emphasize that the goal must be tied to the timeline

Project Actions Timeline

Project Month	Action	Steps Taken	Who is responsible
01-03	Hire Project staff; buy equipment	Interview candidates; training	Project director, manager, catalogers
02-11	Scanning and metadata creation	Project Technicians will scan items and add data	Project technicians
12-13	Publicity, Presentations, Post-Grant activities	News Media & Listservs contacted; Official opening; Presentations organized	Development Librarian, Outreach Librarian, Library Director, project staff

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Instructor note:

For all activities, the goals for each month and quarter need to be outlined so that it is possible to track and measure the progress of the project. It is important for the grant process and the "quarterly" reports that need to be made to the granting institution.

Proposed Project Budget

a. Salaries & Benefits

b. Library materials

c. Operation

d. Equipment (5k+)

e. Indirect Costs

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Instructor note:

A. Benefits may reflect a high % of the total for an employee cost (25%-35%) of total compensation; outside consultants not included in this figure

B. Library materials: books, journals -- any resource added to the library collection to support the activity of the project

C. Operation

- Equipment costing $5,000 or less (e.g., microcomputer) -- Computer software & electronic database subscriptions -- Service/maintenance contracts -- Office and library supplies -- Postage and telecommunications -- Printing and public relations -- Training and conference fees -- Local travel -- Consultants, contract personnel, and short-term temporary labor

D. Equipment costing $5,000 or more. There may be restrictions on equipment, for example, it can not be used for normal library functions

F. Indirect costs may be costs that are carried by the university (or parent institution) examples: storage, costs of networking. More commonly, it covers the administrative costs for managing the grant (sometimes granting agency has a cap) by the university "corporation" and library administration.

Example of Budget Summary

10. Budget Summary	LSTA (1)	Other funds (2)	In-kind (3)	Total (4)
a. Salaries & Benefits	$120,945	------------	$52,275	$173,220
b. Library Materials	0	------------	0	$ 5,000
c. Operation	$ 3,760	------------	0	$ 6,760
d. Equipment ($5K+)	0	------------	0	$ 7,000
e. Total for Objectives	$124,705	$15,000	$52,275	$191,980
f. Indirect Cost	$ 12,471			$ 12,471
g. TOTAL	$137,176			$204,451

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Instructor note:

Notice In-Kind, this is the Institutions contribution, it can be a percentage of a permanent employees salary/benefit; library materials and equipment, building space and utilities, and other operating or overhead costs.

Under operation budget for training and travel that might be necessary

Detailed Information Requests

- Contact info
- Budget details with narrative support for budget
- Client needs and project goals
  - Collection
  - Partners
  - Benefits
  - Relationship between Library Service and client group

- Measurable objectives and actions
- Timeline
- Reporting of results
- Marketing and publicity
- Sustainability

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Instructor note:

Its imperative to clearly explain the budget estimates provided. Granting agencies may reject proposal or request additional information if they do not feel the budget is justified. Often times the applicant submits a short application, if the institution passes that first hurdle, a more detailed proposal is requested. Sometimes the full proposal only is requested.

This slides presents some of the information the applicant may need to address. Each grant will ask different sets of specific questions. Although some information can be recycled (e.g., profile of the institution and the audience) be careful to rewrite or write original content that addresses the specific grant.

Instructor note:

You may use your own examples

Collage of the marketing (outreach or those who are not allowed to "market") and publicity the Oviatt Library undertook as part of the grant requirements. Opening day celebration with traditional dancers (and square dancers), school children invited to attend and display their California mission projects; local councilman made official proclamation: San Fernando Valley History Day. Dinner honoring Heritage Network partners, and the Project staff (not shown); Kevin Starr, the State librarian at the time as guest speaker; image of brochure distributed. Image of Campus magazine cover (with article); also local newspaper and television networks. Presentations and papers published by Dean, Project director, Manager and Metadata Librarian.

Important to write to your congress and senate representatives (state or federal) to let them know about the successful project funded using government funds (Congressional Relational Office);

Grant Resources

- **Government**
  - Federal
  - State
  - Local
- **Corporate and private foundations**
- **Subject related grants**
- **General**
- **Corporate**
- **Family**

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Instructor notes:

All federal grants must be submitted online through grants.gov

Print out registration for grant (takes 3 weeks)

Even Paul Allen

Government Agencies: Examples

- **IMLS (Institute of Museum and Library Services)**
  http://www.imls.gov
- **LSTA (Library Services and Technology Act)**
- **NEA (National Endowment for the Arts)**
  http://www.nea.gov
- **NEH (National Endowment for the Humanities**
  http://www.neh.gov
- **NSF (National Science Foundation)**
  http://www.nsf.gov

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Instructor note:

LSTA funding is state by state, contact your state library for information about the grant process and deadlines. Funding comes from IMLS

If you think that your project falls within the scope of a national award, apply.

IMLS has a detailed tutorial for filling out the grant as well as descriptions for all the types of grants supported and the criteria of eligibility. Start early looking for possible grants and look at the due dates.

Why Some Proposals are not Funded

1. Type of project not funded by the awarding agency
2. Application must be in the geographic area
3. Grant proposal poorly written and does not follow the format required by granting agency
4. Proposed budget and timeline are unrealistic
5. Sustainability not addressed
6. No assessment plan articulated
7. Lack of credibility
8. Lack of funds

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Instructor notes:

1. Do not propose a digital project to an agency that may support libraries and archives, including processing and preservation, but not digital projects. Look at the scope and size which the agency has funded in the past

2. Geographic area: For example, The John Randolph Haynes Foundation grants: Grants are made only to qualified non-profit organizations, never to individuals. Grants are made only to organizations within the United States whose endeavors are focused in or on Los Angeles. http://www.haynesfoundation.org/howtoapply/index.

> Funds are restricted to: a) Original social science research into policy issues of the Los Angeles region;
>
> b) Research into the history of Southern California; c) Archival and cataloging projects important to Los Angeles;
>
> d) Dissertation fellowships at research universities in the five-county Southern California region.

3. Do not attempt to write at the last minute or recycle an older proposal without looking at the criteria and format that is required for each agency

4. Although a library can make hard decisions concerning the scope and nature of a project given the funding and staffing, do not promise a complex and large project without the appropriate budget and staffing to make it work

5. Sustainability not addressed

6. No assessment plan articulated

7. Lack of credibility: no track record but asking for funding for a complex project OR have not successful fulfilled grant goals with previous grants

8. Sometimes the proposal is fine, but it happened to be a very competitive year and more applications than funding.

Exercise 3

For your scenario, fill out the abbreviated grant application form found in your notebook

Work in groups to wordsmith the document

OUTCOMES? Understand the importance of following directions and the complexity of answering grant questions
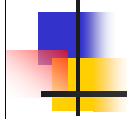
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Instructor note:

30-45 minutes to work on project; 30 minutes (at the maximum) all presentations

Digital Project Planning & Management Basics

Section 5:
Project Management or
Doing the Project

ALCTS

1

Goals of this Section

Understand the issues in managing a digital project:

- Organization of project team and tasks
- Handling the original material
- Increase knowledge about the issues of standards
- Quality control
- Reasons some projects do not achieve their goals

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Section 5

2

Process and Workflow

- All projects are different and workflows will vary by project
- Project Manager will need to address and document:

Staff and Space

Workflow

Conversion of resources

Storage and display of digital collection

Budget and timeline constraints
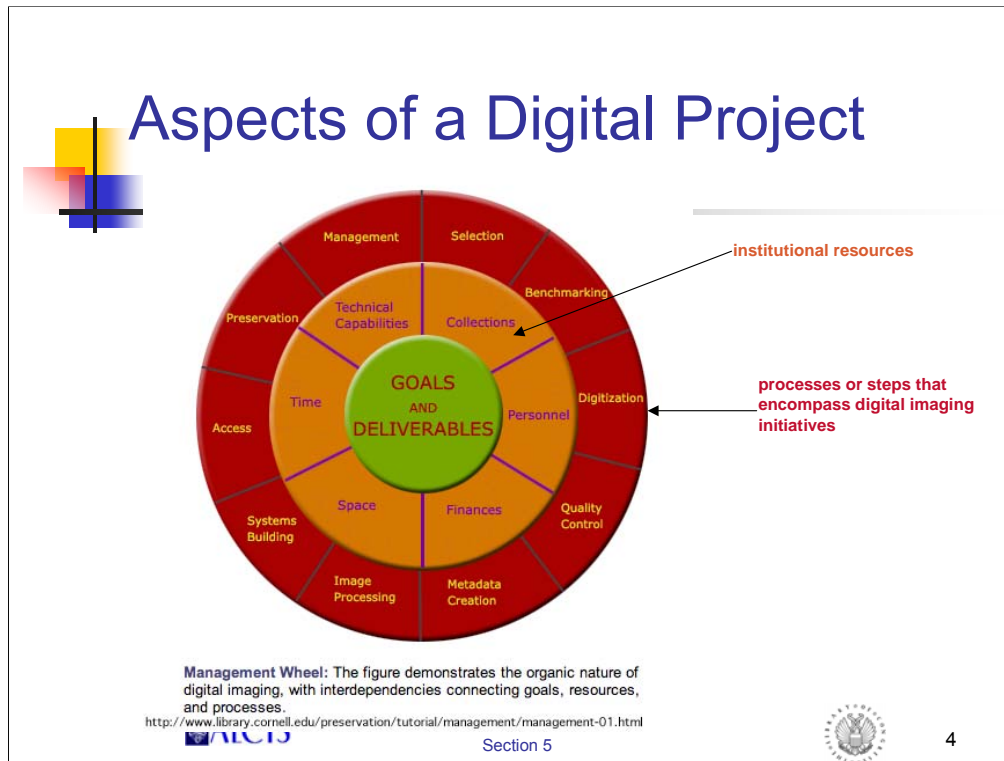
Quality control

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3

Inastructor notes:

Examples handling and scanning microfilm is quite different than scanning photographs and documents. Likewise, rare and fragile special collections materials demand another type of handling.

Converting or migrating data from one platform to another requires a different expertise than creating original metadata in a "off the shelf" product

Aspects of a Digital Project

institutional resources

processes or steps that encompass digital imaging initiatives

Management Wheel: The figure demonstrates the organic nature of digital imaging, with interdependencies connecting goals, resources, and processes.
http://www.library.cornell.edu/preservation/tutorial/management/management-01.html

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4

Green central circle represents the focus of the project: what you expect to deliver

Yellow ring represents the institutional resources that will be impacted by the digital project

Outer red ring represents the processes or steps and issues required to produce the desired project

What is the Project Manager Managing?

- People
- Workflow
- Collection
- Assets (DAM)
- Rights
- Metadata production
- Presentation software

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Section 5

5

Instructor note:

DAMA = Digital Asset management

If working on several collections, including ones owned by project partners, it is imperative that the workflow protects the organization of the collection and that it remains intact. In other words, parts of one collection does not migrate to another collection

Ideally, Project Managers Are Not Alone

Teamwork with subject expertise is necessary

- Curatorial expert
- Scanning expert
- Database expert
- Copyright expert
- Web design expert
- Metadata expert

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Instructor note:

One person can not do it all, the manager manages, but others need to support the process. The manager and team members need a clear picture of what their roles and responsibilities are and the timeframe in which they need to do them. The project manager is responsible for "getting it done" and creating open lines of communication and making sure the documentations is being written.

We most often think of scanning in terms of 2-dimensional objects like photographs or documents. However, we need to add the term conversion: microforms to digital, sound recordings, and moving images

Selection: Setting Priorities

- What is the value of the item in terms of the goals of the project?
- What is the physical nature and condition of the the original?
- Is the material out of copyright? Does the institution have a deed of gift that allows dissemination

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Not everything warrants the expense of digitizing, and it is not feasible to digitize it all. Representative items need to be selected.

The condition of the original may be too fragile to risk scanning. Large 3-dimensional objects may need to be professionally photographed

If it is not in public domain. Intellectual property rights: have you made the best effort to contact the person, family or corporate body who owned the original? Necessary to get clearance. Some institutions will mount digital images if they were not able to find the copyright holder with the understanding they will remove any images found to be under copyright. In the case of the San Fernando Valley History Digital Library, we were given material from various local historical societies who did not have deeds of gift, and sometimes (often) did not know the source. We occasionally received photographs stamped on the back: study photograph from UCLA may not be reproduced. We did not digitize those photographs and at the time did not have the time to wait to seek permission.

Selection Process:

- Survey collections
- What resources match goals
- Evaluate collections:

  • Cultural or educational value

  • Appropriate for scanning

  • Preservation issues

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Value?

- May be defined by the mission or goals of the institution
- Rarity or intrinsic artistic value
- Provides insight or illustrates a subject matter
- Provides content to areas poorly documented
- Added value

  Display images enhanced

  Links to related resources

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Massachusetts Historical Society digitized the ledgers of Thomas Jefferson. As part of the digitization process, they added variant forms of the spelling: modernized and corrected and provided a transcribed and the original pages. Adams papers: mention of an event in a letter to his wife can be linked to his journal entry as well as news items published at the time.

Links to finding aids from the individual digitized images

Common Standards

- *Dublin Core*:
  - metadata for document and image collections; often combined with LC name and subject authorities
- *MODS (*Metadata Object Description Standard)
  - simpler MARC that can be expressed in XML with language (not number) tags
- *EAD* (Encoded Archival Description)
  - standard for structuring find aids for the Web; often combined with DACs and LC name and subject authorities

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MODS Metadata for

DACS: Description for archival collections (2004) published by SAA (Society of American Archivists)

See bibliography for suggested readings; ALCTS has 2 other courses in this series that deal with metadata standards

Standards Typology

Content Standards	Data Structures	Data Values	Syntax
•AACR2 •RDA •CCO •DACS	•MARC •Dublin Core •MODS •VRA Core •CDWA •EAD •ONIX	•LCAF •LCSH •MeSH •TGM •AAT •TGN	•MARC •MARCXML •RDF •METS

Based on slide
courtesy of Luiz
Mendes

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Instructor Notes:

The best selection of the metadata standard, content standards, controlled vocabularies will be determined by the nature and scope of the digital resources and what standards are already in use.

Syntax (Communication format)

•*RDA: Resource Description and Access*

•CCO

Cataloging Cultural Objects

•DACS

Describing Archives: A Content Standard

RDF
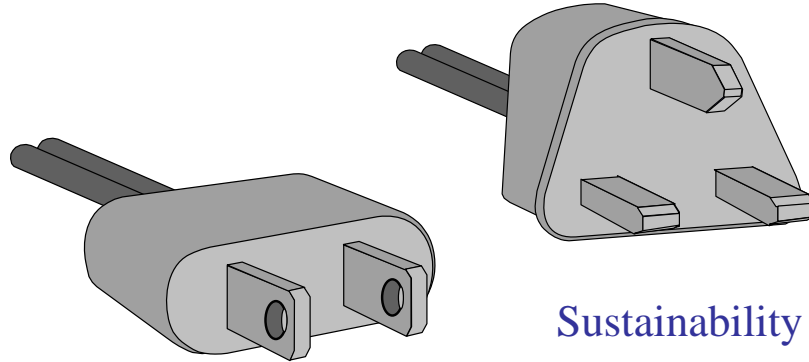
Resource Description Framework

METS

Metadata Encoding and Transmission Standard

Why go to the trouble to follow standards?

Interoperability

Sustainability

With Permission, Murtha Baca

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Interoperability

The ability of different types of computers, networks, operating systems, and applications to work together effectively, without prior communication, in order to exchange information in a useful and meaningful manner.

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Interoperability: Are forms of the access points the same as in other databases (like your catalog), especially important if you are planning to use a search engine for searching across your ILS and digital collections

Are you using the metadata standards in a way that an OAI harvester would expect? Would you be able to migrate the content to another platform?

Are you creating uncompressed tiffs for archival purposes?

Metadata Standards: Issues

- Purpose
- Audience
- Best Practices
- Interoperability

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Metadata Definitions

- Data about data
- "Metadata are structured, encoded data that describe characteristics of information-bearing entities to aid in the identification, discovery, assessment, and management of the described entities."
- "Data that characteristics source data, describes their relationships, and supports the discovery and effective use of source data."
- "Another name for cataloging"

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1st definition from:

2nd definition: Burnett, et. al. 1999: two traditions: bibliographic and data management (integration of two traditions)

Functions of Metadata

Metadata can be used for any one or all of the following purposes:

- Resource discovery
  - Potentially can enhance discovery of resource by web crawlers
- Manage a digital resource
- Ownership and authenticity
- Describe the nature of the resource

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Recent research by Turner and Brackbill showed that embedded keyword metatags improved the retrieval of Web pages and increased their relevancy -- description metatags seemed to have ignored.

Unfortunately, the algorithms that determine how any one searchengine retrieves Web pages is a closely guarded secret (to avoid spamming) and therefore makes it difficult to exploit the metatags to improve retrieval.

However, many of the "scholarly" electronic resources are not part of the surface web but are in the deep web and usually only accessible through a single portal or homepage: part of a repository.

Mechanisms for Accessing Metadata

- Embedded HTML
- Embedded XML/RDF
- Repositories
- Record Management Systems
- Analog files (paper or card files)

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Instructor notes:

The 3rd mechanism involves use of databases to store and manage metadata descriptions.

Metadata databases with standard query interfaces are often called metadata repositories. Metadata databases are queried for metadata records using standard information retrieval protocols such as Z39.50 or X.500/LDAP.

Examples of resource management systems include recordkeeping systems, document

management systems, web management systems, records management systems and collection management systems. Such metadata can often be translated to the standards required by a resource discovery system.

Metadata Selection Principles

1. Appropriate t the materials, users and intended and future use of digital objects
2. Supports interoperability
3. Allows use of controlled vocabularies
4. Clear statement on terms of use (rights)
5. Supports long-term management
6. Metadata standard itself should have: authority, authenticity, archivability, persistence, & unique identification

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Types of Metadata

- Descriptive
- Adminstrative
  - Preservation
  - Technical
  - Rights
  - Use
- Structural

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Descriptive Metadata

Metadata that supports the discovery of a digital
object

Contains:

- Access points
- Provides links to other digital objects
- Information about the digital object
  (electronic resource)

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Instructor notes:

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Metadata used to describe or identify information resources

- Cataloging records

- Finding aids

- Specialized indexes

- Hyperlinked relationships between

resources

- Annotations by users

- Metadata for recordkeeping systems

generated by records creators

Administrative Metadata

- Metadata used in managing and administering information resources, e.g., location or donor information

- Includes <u>rights</u> and terms & conditions to access information

- Data on the creation and preservation of the digital object

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Administrative Metadata Includes

- **Preservation**
  - Records information about formats
- **Technical**
  - Records information about processes, logs
- **Rights**
  - Records information about access rights copyright, use

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Preservation:

- Documentation of physical condition of resources

- Documentation of actions taken to preserve physical and digital versions of resources, e.g., data refreshing and   migration

Technical includes:

define the file type, the resolution at which the image was scanned, the hardware and software used in producing the image, compression, color space, pixel dimensions, and the date on which the digital file was made. Hardware and software documentation

   - Digitization information, e.g., formats, compression ratios, scaling routines

   - Tracking of system response times

   - Authentication and security data, e.g., encryption keys, passwords

Use Metadata related to the level and type of use of information resources

-Exhibit records

   -Use and user tracking

   -Content re-use and multi-versioning information

Rights: restrictions and terms of use.

Structural Metadata

Defines the digital object's internal organization and is needed for display and navigation of that object.

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Instructor notes:

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Information used to display digital resources so that

- we can navigate among them and within them;
- also includes information on the internal
- organization of the digital resource. Structural
- metadata might include such information as the
- major physical divisions of a resource (i.e., series in a collection, chapters in a book);
- sub-object relationships (i.e., individual pages in a diary); and
- elaborate hierarchical structures that can be used to navigate in diverse collections such as archives.

Semantic Interoperability

"The ability to seamlessly search for digital information across heterogeneous distributed databases through a federated search."

The definitions of the fields * have a standard meaning across multiple implementations and across different metadata schema. The effectiveness of mapping from one database to another, or create crosswalks, is weakened when the interpretation/use of the fields varies.

*aka elements, categories of information

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What standards are being used by your institution?

Structural Interoperability

Achieved through agreements about content description standards. For example,

- Controlled vocabularies
  - LCSH
  - AAT
  - NAFL
- Description standards
  - AACR2
  - Best Practices

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Scanning: Formats

1.	Finding Aids	1.	EAD
2.	Photographs and documents	2.	TIFFs (masters) JPGs (web)
3.	Oral history audio-recordings	3.	.wav files or mp3 files
4.	Transcripts	4.	PDFs
5.	Books	5.	TEI

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The standard for finding aids on the web is using the Encoded Archival Description which is expressed in xml (so can define tags) and uses a transforming style sheet to display as if html

Preservation of the originals is outside the scope of this presentation. But the standard is to create a TIFF (uncompressed) file which is not manipulated. There is software that allows you to use the original TIFFS that are compressed for display but keeps the original resolution. However, jpgs is still the standard for web display. JPGS can not be used successfully for commercial purposes. TIFFS are used as the masters. Preservation of the masters is not being adequately addressed by some projects. Backups are essential

Image Standards

CDL Guidelines for Digital Images
http://www.cdlib.org/inside/diglib/guidelines/bpgimages/

- TIFFS

    Used for archival masters

    Too large for Web delivery

- JPGs

    Standard for Web delivery

    All browsers support

    Compresses (lossy) = loss of information

    Not suitable for archival purposes

JPG2000

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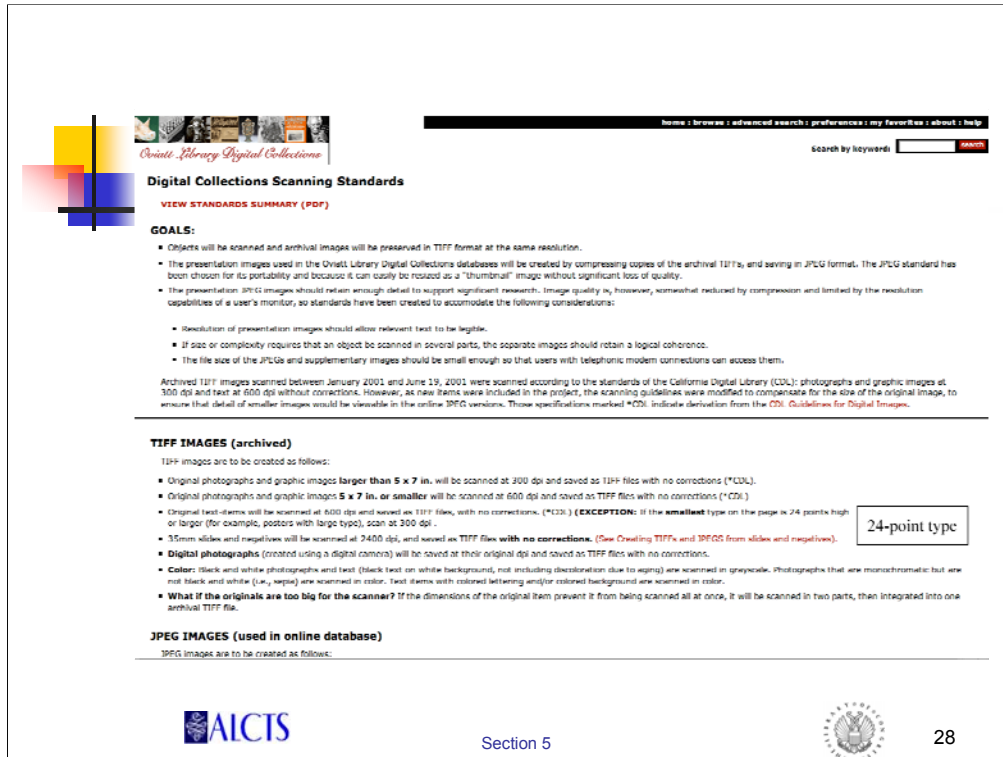
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Instructor Notes

Not only are their specific formats used for specific types of content, but
there are standards within each. There are standards for the size and
resolution for images of photographs, text and 3-D objects which correspond
to their legibility on the web.

Instructor Notes:

Scanning standards adopted by your project need to be well documented so
the practice continues after grant is over (sustainability) and for archival
purposes, that is, preserving the archival masters

System Requirements

- Is your system able to support mounting multiple formats: images, streaming audio and video, PDFs?
- Are you developing a platform which you will require support or will use off the shelf software which will require annual fees?
- Hardware: scanners, computers
- Software: imaging and metadata creation

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We found that human labor, especially in terms of IT, is very expensive. Despite annual fees it is far less expensive to use a 'service' rather than developing our own software. Does the database do everything we want? No, but there is always compromise in a project. It was considered "good enough."

PREMIS: Fields Pertaining to Objects

- objectIdentifier
- preservationLevel
- objectCategory
- objectCharacteristics
- creatingApplication
- originalName
- Storage
- Environment

- signatureInformation
- relationship
- linkingEventIdentifier
- linkingIntellectual Entity Identifier
- linkingPermission StatementIdentifier

http://www.oclc.org/research/projects/pmwg/

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Instructor notes:

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PREMIS preservation Metadata: Implementation Strategies

PREMIS Fields for …

Events

•eventIdentifier
•eventType
•eventDateTime
•eventDetail
•eventOutcome
•eventOutcomeDetail
•linkingAgentIdentifier
•linkingObjectIdentifier

Agents

•agentIdentifier
•agentName
•agentType

Characteristics

• compositionlevel
• fixity
• size
• format
• significantProperties
• inhibitors

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Instructor notes:

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Oviatt Library Digital Collections

California State University
Northridge

Controlled Vocabulary for San Fernando Valley History Digital Library and Latino Cultural Heritage Digital Archives

SEE ALSO: METADATA ELEMENTS SUMMARY | CONTENT GUIDELINES

In order to support efficient retrieval of material, certain indexed fields in the metadata records are under authority control, that is, there is standard way to express a subject or topic, personal or corporate name, or location. Use the left button of your mouse to highlight the term you wish to search and copy it into the appropriate box on the search screen.

Below is a summary of which fields are under vocabulary control followed by a copy of the headings from Contentdm. Although the lists linked to this page in the right-hand column are updated at regular intervals, they will not necessarily contain all the terms that have been included in the database.

Field Name	Controlled Vocabulary		
Title	No		
Description	No		
Subject	Yes, Library of Congress Subject Headings	VHistory	VIssues
Topic	Yes		Fixed List
Keywords	No		
Neighborhood	Yes, Library of Congress Subject Headings or Thesaurus of Geographic Names	VHistory	VIssues
Date	No, ISO standard		
Alternative Dates	Yes, Library of Congress Subject Headings	VHistory	VIssues
Photographer/Author/ Interviewee	Yes, Name Authority File	VHistory	VIssues
Donor & Others	Yes, Name Authority File	VHistory	VIssues
Media	Yes, AAT	VHistory	VIssues
Media Measurement	No		
Type	Yes, Dublin Core Types	VHistory	VIssues
Format	Yes, Internet Media Types		
Identifier	No		

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Instructor notes:

Whatever metadata standard you adopt. It is vital to document the guidelines established locally. For interoperability, its important to adhere to the metadata standard as closely as possible. This is particularly important if you plan to submit your images and metadata to larger collections or allow another project to harvest your content.

Instructor notes:

Example of a best practices document. The Western States Best Practices for using Dublin Core for digital projects is an extensive document which is shared by multiple states and adopted by the LSTA standards of their state libraries. (California does not belong) Contains both extensive information about the use of each element and examples. Geared for non-librarians to implement.

Why Some Projects Do not Reach Expected Goals

- Poor selection policy
- Unrealistic expectations
- Unclear or fuzzy measures of success
- Poor selection of presentation software
- Poor communication within team
- Poor documentation of process and procedures
- Poor quality control

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Exercise 3

Teams reconvene

Goals of Exercise 3:

- Demonstrate an understanding of implementation issues
- Practice consensus building
- Summarize how the team would answer grant questions

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Digital Project Planning & Management Basics

Section 6
How to Measure Success:
Outcome Evaluation & Assessment

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1

Or "How do we know we did good?"

Goals of this Section

- Learn what is an "outcome-based" evaluation
- Learn why is assessment important
- Understand how to conduct an "outcome-based" evaluation
- Know how to decide
  - who will conduct the evaluation of the project when will it take place
  - what will be the criteria for judging success

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2

Instructor note:

Knowing how to determine what information needs to be collected and analyzed in one of the primary concerns of any assessment plan in the library. What we will focus on are the criteria and measures which are specific to digital projects within the general principles of assessment

Outcome-based Evaluation

- Encouraged by IMLS & LSTA grants
- Demonstrates that the goals of the digital project were met
- Includes assessment of operations or management (staffing, workflow efficient)
- Includes quantitative and qualitative measures
- Are user-centric

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3

Outcome-based Evaluations Look at:

- Impact and benefits that are the result of the project
- Short-term changes
- Long-term changes

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Components of Outcome-Based Evaluations

- Inputs
- Activities
- Outputs
- Outcome indicators (quantifiable outcomes)
- Outcome targets
- Outcome measures

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Processes: processing of collections, preservation

Typical Inputs

- Staff
- Money
- Equipment

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Typical Activities

- Assessment of collection
- Processing of archival and special collections
- Preservation activities
- Digitization and metadata creation

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Typical Outputs

- Number of images / objects scanned or digitized
- Number of metadata records created
- Number of supporting web pages created
  - Project documentation
  - Curriculum packages created
  - Survey or summary of collection

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Instructor note:

Quantifiable output measures

Qualitative measures would be lessons learned, observations about the process

Typical Outcome Targets

- Size of collection estimated in grant proposal
- Impact on target audience
- Creation of new audience
- Protection of fragile resources (less handling)
- 24/7 access
- Need gap closed

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Typical Outcome Measures

- Indicators of change
- Connected to the stated goals of project
- Measured against a benchmark through data collection
  - Quantitative
  - Qualitative

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Instructor note:

Remember the audience description and needs gap?

Special collections and archives may experience a significant increase in requests for their resources as more people become aware what a rich collection you own. May need to add support staff to monitor the increased use of the reading room, and create copies of digital objects for scholarly publications. Although a specific item may be handled less,, overall, use will go up

Benchmark

- Represents the starting point
- Determine what you plan to measure at the onset of the project
- Examples:
    - How many students and faculty use the archives and special collections for research?
    - How many assignments on local history are answered by library resources, and which resources are use?

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Instructor note:

This why you need to think about your measures of success before you start the project

Examples of Quantitative Measures

- Size of the digital collection
- Number of inquires
- Transaction logs
  - Number of visits to the sites
  - Referring urls
  - IP address of user
  - Date and time of searches
  - Number of searches
  - Types of searches

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Instructor note:

Although some systems can track the name of the user, and a unique identifier to track client between requests (interesting to analyze clusters of searches), not every library will want to keep transaction logs about individuals.

Qualitative Outcomes

Qualitative in terms of accessibility, usability, functionality, user satisfaction and expectations

- Focus groups
- Surveys
- Interviews

Check with institution concerning guidelines for using human subjects

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Some survey information can provide both quantitative and qualitative measures. Open end questions are qualitative; Likert scale

SurveyMonkey -- setting up a question

Usability

- Assesses the structure of the digital site
- Assess how the user interacts with site
- Measured by:
  - Ease of navigation
  - Features clearly labeled
  - Logic of presentation

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Precision and recall quality will be determined by the quality of the metadata associated with the digital object; the functional requirements

Discovery by name, topic, place, date; distinctions and collocations

- Video people usn the site
- Develop a focus group for feedback (in-person)
- Develop a web or print based survey

Functionality

- Does the software and web site perform as intended?
- Can it deliver the results expected?
- Measured by:
  - Precision and recall of search engine
  - Search options allow:
    - Limits
    - Group
    - Basic and advanced

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Precision and recall quality will be determined by the quality of the metadata associated with the digital object; the functional requirements

Discovery by name, topic, place, date; distinctions and collocations

Accessibility

Can the site be used by anyone regardless of disability or impairment?

- Hearing access
- Vision access
- Mobility access
- Cognitive access

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What is accessibility?

Access to people with vision, hearing and motor impairments

Includes color blindness, cognitive and developmental limitations

Web pages need to facilitate adaptive technologies

Legislation

- **Americans with Disabilities Act (ADA) (1990)**
  http://janweb.icdi.wvu.edu/kinder/pages/ada_statute.htm
- **Telecommunications Act of 1996**
- **Assistive Technology Act of 1998**
- **Telecommunications Act Accessibility Guidelines (1998)**
- **Standards for Electronic and Information Technology (12/2000)** http://www.section508.gov/

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ADA: Title II requires a public college to take appropriate steps to ensure that communications with persons with disabilities "are as effective as communications with others."

Assistive technology act of 1998: provides financial assistance to states to maintain and strengthen a permanent comprehensive statewide program of technology-related assistance for individuals with disabilities of all ages.

Standards for Electronic … why we are here today

16 technical standards regarding Web-based Intranet and Internet information and applications that detail the technical and functional performance criteria for accessibility

Section 508 Dates from 1973 guidelines added to insure electronic information be accessible to people with disabilities

Universities in the CSU have nondiscrimination policies regardless of race color, national origin, gender, age, marital status , religion, disability or sexual preference.

Accessibility Problems

- Images without alt tags
- Some tables for layout
- Content presented as graphics without text version
- Video and audio clips without text versions
- Older versions of Adobe
- Links that are not text readable

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Instructor note:

Adobe prior to version 5 is not accessible; for later versions, the document still needs to be properly formatted in order to accessible.

Web Standards & Testing

- Web Accessibility Initiative (WAI)
  http://www.w3.org/WAI/
- Bobby http://www.cast.org/bobby/
- Electronic and Information Technology
  Accessibility Standards
  http://www.access-
  board.gov/sec508/508standards.htm

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Instructor notes:

Demonstrate the AIS tool bar (Download to IE browser) if there is time

Electronic and Information Technology Accessibility Standards Published in
the Federal Register on December 21, 2000]

Exercise 4

Teams reconvene for 30 minutes

Consider what criteria will be used to measure success and how to build in the quality necessary to reach success

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Digital Project Planning & Management Basics

Optional Unit: Specific metadata standards and applications overviews

Addendum to session 4

1

Session Objectives

- Understand standards for
  - Metadadata elements
  - data value standards
  - data content standards and
- Learn about metadata standards developed by specific communities
- Evaluate the efficacy of the standard for a specific community, their strengths and weaknesses
- Explore the adoption of non-traditional standards by libraries

2

Session Outline

- Introduction to basic concepts
- Description of community specific metadata schemes
- Description of specific structural metadata and syntaxes

3

Questions to Ask When Selecting a Metadata Standard

- What type of material will be digitized?
- How much information is available?
- Is there a Community of practice developed for this resource type(s)?
- What is the purpose of digital project?
- Did your "Needs Assessment" elicit who will be the audience and how they would use the content?
- Are there pre-existing digital projects with which this one needs to function?
- What Systems options are available?

4

Type of material:

•Format (photographs, documents, oral histories, raw data)

•Complexity of relationships (is it archival in nature and do individual items make sense out of a broader context; is there a hierarchical relationship like photo albums)

•Are there multiple versions that need to be displayed

•Who is the intended audience and their expectations and usage

Metadata Standards in a Resource Grid

stewardship

high   low

MARC, DC ONIX, MPEG

Books Journals

DC

Freely-accessible web resources

Unique-ness

low

Books
Journals
Newspapers
Government docs
Audiovisual
Maps
Scores

Freely-accessible web resources
Open source software
Newsgroup archives

Institutional assets

Special collections

high

Special collections
Rare books
Local/Historical Newspapers
Local history materials
Archives & manuscripts
Theses & dissertations

Institutional repositories
ePrints
Learning objects/materials
Research data

MARC, METS, EAD, DC, TEI

DC, DDI, IEEE/LOM, FGDC, EAD, TEI, SCORM

Stuart Weibel. Presentation **State of the Dublin Core Metadata Initiative** Göttingen August 11, 2003
(Based on Lorcan Dempsey Presentation)

5

Text Encoding Initiative (TEI)

An international project to develop guidelines for the preparation and interchange of electronic texts for scholarly research as well as a broad range of other language industry uses. The TEI DTD is an SGML Document Type Definition for encoding literary works. For more information, see http://www.tei-c.org/

SCORM

See SCORM (Sharable Content Object Reference Model)

Metadata Standards

- ## Schemas (a.k.a. 'Element Sets')
  - Set of semantic properties, in this context used to describe resources
  - Not the same as "XML schemas" (which has a very precise meaning)
- ## Syntaxes
  - The structural wrapping around the semantics
  - Essential for moving information around

6

Format is a term we are familiar with

DC introduced the term "element set"

We are now calling them "schemas" (emphasizing the systematic idea). "XML schemas" are not the same thing, they are the structural "template" that allows XML data to be validated.

Syntax allows metadata to be shared, move around, and so forth

Schemas are essential for understanding "what it is" that the metadata is supposed to be doing.

Content Standards

- AACR2 functions as the content standard for traditional cataloging
- RDA (the successor to AACR2) aspires to be the content standard for non-MARC metadata
- DACS (Describing Archives: a Content Standard)
- CCO (cataloging Cultural Objects) new standard developed by visual arts and cultural heritage community
- Best practices, Guidelines, Data dictionaries-- less formal content standards

7

RDA is a work in progress which is more than AACR3 but its focus is still being debated

Value Standards

- Library of Congress Subject Headings
- Art and Architecture Thesaurus
- Thesaurus of Geographical Names

8

Some Example Schemas

❑ Dublin Core (http://dublincore.org)
  ■ Simple and Qualified
■ MODS (www.loc.gov/standards/**mods**/)
■ VRA 4.0 (http://www.vraweb.org/projects/vracore4/index.html)
■ IEEE-LOM (http://ltsc.ieee.org/wg12/)
■ ONIX (http://www.editeur.org/onix.html)
■ EAD (http://www.loc.gov/ead/)
■ TEI (http://www.tei-c.org/)

9

We can look at MARC21 in a slightly different way.

IEEE-LOM (eye-triple-e lahm) is a schema for educational materials. ONIX for Books is what is used by Amazon, BN and other online bookstores. There is an ONIX for Serials as well.

EAD (Encoded Archival Description) - An SGML DTD that represents a highly structured way to create digital finding aids for a grouping of archival or manuscript materials. The standard is maintained in the Network Development and MARC Standards Office of the Library of Congress (LC) in partnership with the Society of American Archivists. For more information see http://lcweb.loc.gov/ead/.

IEEE LOM (Institute of Electrical and Electronics Engineers. Learning Object Metadata) - Standard jointly developed by IMS, IEEE, ARIADNE, and ADL/SCORM for describing, exchanging and managing, locating and evaluating learning objects, that is, instructional content, in a digital or non-digital format. The Draft standard dated 15 July 2002 includes nine categories for the metadata: general, life-cycle, meta-metadata, educational, technical, rights, relation, annotation and classification. Includes a mapping to Dublin Core Simple (Annex B, p. 44)

IMS (Instructional Management Systems) - A specification developed by EDUCAUSE (formerly EDUCOM), a consortium of U.S. institutions of higher learning and vendors, for for the discovery and description of learning objects. The specification covers a wide range of e-learning related activities, e.g. vocabulary markup, learning design, content packaging, learner information. It became the basis for the IEEE Learning Object Meta-Data (LOM). The specification includes the element names, definitions, datatypes, and field lengths and defines a conceptual structure for the metadata.

MODS (Metadata Object Description Schema) - "Intended to be able to carry selected data from existing MARC 21 records as well as to enable the creation of original resource description records. It includes a subset of MARC fields and uses language-based tags rather than numeric ones, in some cases regrouping elements from the MARC 21 bibliographic format."

OWL- Web ontology language http://www.w3.org/TR/owl-features/. OWL is a language for describing ontologies and schema. It can specify concepts and their relationships. OWL/XDD (XML declaration description) allows a means to express complex rules and constraints.

ONIX (Online Information eXchange) - Developed by book publisher for the exchange of book trade information between publishers and wholesalers, e-tail and retail booksellers, other publishers, and anyone else involved in the supply chain. Standards are also being developed by publishers for serials. Mapping between ONIX and MARC exists to facilitate the exchange of content from publishers to library cataloging agencies. Consists of more than 236 elements.

SCORM (Sharable Content Object Reference Model) - eLearning metadata standards supported by ADL (Advanced Distributive Learning Initiative). See IEEE LOM

Dublin Core: Simple

- Fifteen elements; one namespace

- Controlled vocabulary <u>values</u> may be expressed, but not the sources of the values

- Minimal standard for OAI-PMH

- Used also as:
    - core element set in some other schemas
    - switching vocabulary for more complex schemas

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The namespace is where machine (and usually human) readable information can be found.

May use controlled vocabulary but can't say where the terms come from

(MARC allows different classification and allows the cataloger to say where that classification scheme came from.)

Qualified DC allows the metadata creator to say what kind of controlled vocabulary is used, but not extensively

IEEE-LOM uses simple DC as its core element list

DC is the "lingua franca" for many digital projects. It doesn't "map out" (to richer schemas) as well as it "maps in."

Dublin Core Metadata Initiative (DCMI) Origins

- 2nd W3C Conference Chicago (October 1994)
  - Conversations at this conference led to the first meeting at OCLC in Dublin Ohio, hence its name
  - Combination of IT and Librarians

- Workshops began in 1995

  - March 1995, NCSA/OCLC workshop in Dublin, Ohio
  - Identified the need for author generated metadata, a "core": of common elements to describe Web content to help discovery

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The idea was hatched to create a simple set of imbedded elements in HTML pages which would aid search engines to more precisely recall relevant Web pages. Simple enough for non-experts to understand

Its development was for retrieval not what Librarians would call Cataloging which has a broader function. Identification/evaluation/location are dependant how results are displayed: title/description. Indexing by a metatag possible but most search engines ignore. Google recently changed its algorithm to include metatags with Google Scholar. Most people searching the web use 1-2 words, simple non-boolean non-advanced searching.

The original view was that the metatags could be embedded in the HTML (Now in XML, RDF, relational databases)

Mission of the DCMI (Original)

"The mission of the Dublin Core Metadata Initiative (DCMI) is to make it easier to find resources using the Internet through the following activities:

- Developing metadata standards for resource discovery across domains

- Defining frameworks for the interoperation of metadata sets

- Facilitating the development of community- or domain-specific metadata sets that work within these frameworks"

Weibel http://purl.org/dc/workshops/dc8conference/plenary/sld018.htm

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DCMES Characteristics

- Simplicity
- Supports resource discovery
- All elements are optional/repeatable
- No order of elements prescribed
- Extensible* / Refined*
- Interdisciplinary/International
- Semantic interoperability

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The ability to extend or refine the elements was a point of discussion at many meetings. Implementations that used the 15 elements wished to modify the elements for their special needs by using dot.syntax. By 1998 (DC6) it became clear that many projects were extending the meaning of the basic elements by using the dot.syntax structure. It was recognized that by extending the meaning, it meant that interoperability between databases would be reduced.

Simplicity: can be implemented by non-catalogers; not meant to replace richer description schema. Lower-cost alternative for describing materials

Semantic interoperability: on Internet Commons different schema for describing resources (based on community/discipline needs: libraries, museums, archives, geospatial information systems. Core attributes, supports cross-file searching

Semantic interoperability - Ability to search for digital information across heterogeneous distributed databases whose metadata schemas have been mapped to one another. It is achieved through agreements about content description standards; for example, Dublin Core, Anglo-American Cataloging Rules.

Syntactic interoperability - Achieved by marking up our data in a similar fashion so we can share the data and so that our machines can understand and take the data apart in sensible ways; for example, XML, EAD and MARC.

Interoperability - The ability of different types of computers, networks, operating systems, and applications to work together effectively, without prior communication, in order to exchange information in a useful and meaningful manner. There are three aspects of interoperability: semantic, structural and syntactical.

Issues of interoperability: Interpretation and Use of Elements; Use of Element Qualifiers (Encoding & Refinement); Domain-Specific Elements & Qualifiers; Registry; Search Engine Development; Authenticity

Interdisciplinary/International - Consensus about a simple standard for resource discovery

Mission of the DCMI - The mission of the Dublin Core Metadata Initiative (DCMI) is to make it easier to find resources using the Internet through the following activities:

•Developing metadata standards for resource discovery across domains

•Defining frameworks for the interoperation of metadata sets

• Facilitating the development of community- or domain-specific metadata sets that work within these frameworks

The ability to extend or refine the elements was a point of discussion at many meetings. Implementations that used the 15 elements wished to modify the elements for their special needs by using dot.syntax. By 1998 (DC6) it became clear that many projects were extending the meaning of the basic elements by using the dot.syntax structure. It was recognized that by extending the meaning, it meant that interoperability between databases would be reduced.

Interdisciplinary/International

Consensus about a simple standard for resource discovery

Value

- International and cross-domain
- Increase efficiency of the discovery/retrieval of digital objects
- Provide a framework of elements which will aid the management of information
- Promote collaboration of cultural/educational information as shared "social capital"

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DCMES Principles

- **1:1**

- **Dumb Down**

- **Appropriate Values**

http://dublincore.org/documents/usageguide/glossary.shtml

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1:1 - whereby related but conceptually different entities, for example a painting and a digital image of the painting, are described by separate metadata records

Describe one manifestation of a resource with one record

Ex.: a digital image of the Mona Lisa is not described as if it were the same as the original painting

Separate descriptions of resources from descriptions of the agents responsible for those resources

Ex.: email addresses and affiliations of creators are attributes of the creator, not the resource

DUMB DOWN: The qualification of Dublin Core Elements is guided by a rule known colloquially as the Dumb-Down Principle. According to this rule, a client should be able to ignore any qualifier and use the value as if it were unqualified. While this may result in some loss of specificity, the remaining term value (minus the qualifier) must continue to be generally correct and useful for discovery. Qualification is therefore supposed only to refine, not extend the semantic scope of an Element.

The fifteen core elements are usable with or without qualifiers.

Qualifiers make elements more specific:

Element Refinements narrow meanings, never extend

Encoding Schemes give context to element values

If your software encounters an unfamiliar qualifier, look it up – or just ignore it!

Appropriate values - Best practice for a particular Element or Qualifier may vary by context. Definitions may provide some guidance; other information may be found in *"Using Dublin Core"*

Dublin Core Metadata Element Set (DCMES) 1996

The 15 Dublin Core elements can be divided into three categories:

CONTENT	INTELLECTUAL PROPERTY	INSTANTATION
Title	Creator	Date
Description	Contributor	Language
Subject	Publisher	Identifier
Relation	Rights	Format
Source		
Coverage		
Type		

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By 1996, the 15 elements had been established

kind of extensibility is what I refer to as the Lego™ metaphor–modular extensibility. Let's say you want additional elements to support local or disciplinary specific requirements. In addition, you want them to be complementary–that is to say, you want them to be able to fit together. So, you might have a block of metadata that we call description metadata, such as the Dublin Core, but you also want species distribution metadata.

Ex.: Simple Dublin Core

```
<metadata>
  <dc:title>Cataloging cultural objects,</dc:title>
  <dc:contributor>Baca, Murtha.</dc:contributor>
  <dc:contributor>Harpring, Patricia./dc:contributor>
  <dc:subject>Information organization</dc:subject>
  <dc:subject>Metadata</dc:subject>
  <dc:subject>Cultural property--Documentation</dc:subject>
  <dc:subject>CC135.C37 2006</dc:subject>
  <dc:subject>363.6</dc:subject>
  <dc:date>2006</dc:date>
  <dc:format>396 p.</dc:format>
  <dc:type>Text</dc:type>
  <dc:identifier>ISBN:0838935648</dc:identifier>
  <dc:language>en</dc:language>
  <dc:publisher>ALA Editions</dc:publisher>
</metadata>
```

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There is no prescribed order of elements in DC. Everything is optional. Notice that the <subject> element has a classification number in it (this is legal, the distinction between classification and topical subject is at the level of the vocabulary). This record also has an identifier, the ISBN (this is a physical object, not a digital one)

DC does not specify a particular syntax.

Extensible: Lego Blocks

- **Extensible architecture**
  - Spectrum of simple to more complex
  - DCMES may be used with other metadata element sets
  - Lego™ Metaphor: Modular building blocks used to develop application profiles of mixed metadata
- **Leverage existing thesauri, classification systems, ontologies, local vocabularies**

Stuart Weibel. Presentation **State of the Dublin Core Metadata Initiative** Göttingen August 11, 2003

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Not: "One size fits all".

Rather: many ways to describe one object:

MARC: complete, for library items

DC: simple, for helping people find things

Terms and conditions: who allowed to use it?

Recognized need: General framework for different types of metadata

Dublin Core: Qualified

dublincore.org

- ▪ 'Qualified' includes element refinements and encoding schemes

  - ▪ More specific properties

  - ▪ Two namespaces

  - ▪ Explicit vocabularies

- ▪ Additional elements, including 'Audience,' 'InstructionalMethod,' 'RightsHolder' and 'Provenance'

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Same kind of parent property

Recommend explicit vocabularies

Qualified DC has more elements than what is listed here see: http://dublincore.org/documents/usageguide/qualifiers.shtml (scroll down to chart)

Qualified Dublin Core

Elements	Element Refinements	
1. Identifier	Abstract	Is referenced by
2. Title	Access rights	Is replaced by
3. Creator	Alternative	Is required by
4. Contributor	Audience	Issued
5. Publisher	Available	Is version of
6. Subject	Bibliographic citation	License
7. Description	Conforms to	Mediator
8. Coverage	Created	Medium
9. Format	Date accepted	Modified
10. Type	Date copyrighted	Provenance
11. Date	Date submitted	References
12. Relation	Education level	Replaces
13. Source	Extent	Requires
14. Rights	Has format	Rights holder
15. Language	Has part	Spatial
	Has version	Table of contents
	Is format of	Temporal
	Is part of	Valid

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More Dublin Core "Refinements"

Encodings	Types
Box	Collection
DCMIType	Dataset
DDC	Event
IMT	Image
ISO3166	Interactive Resource
ISO639-2	Moving Image
LCC	Physical Object
LCSH	Service
MESH	Software
Period	Sound
Point	Still Image
RFC1766	Text
RFC3066	
TGN	
UDC	
URI	
W3CTDF	

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Encodings: controlled vocabulary for content

Types are limited to resources

Sheet music and scores are considered image; if with lyrics, repeat

Image jpg

Text jpg

Ex.: Qualified Dublin Core

```
<metadata>
  <dc:title xml:lang="en">Cataloging cultural objects.</dc:title>
  <dc:contributor>Baca, Murtha.</dc:contributor>
  <dc:contributor>Harpring, Patricia.</dc:contributor>
  <dc:subject xsitype="LCSH">Information
organization</dc:subject>
  <dc:subject xsitype="LCSH">Metadata</dc:subject>
  <dc:subject xsitype="LCSH">Cultural property--
Documentation</dc:subject>
  <dc:subject xsitype="LCC">CC135.C37 2006</dc:subject>
  <dc:subject xsitype="DDC">363.3</dc:subject>
  <dc:date xsitype="W3CDTF">2006</dc:date>
  <dcterms:extent>396 p.</dcterms:extent>
  <dc:type xsitype="DCMIType">Text</dc:type>
  <dc:identifier xsitype="URI">ISBN: 0838935648 </dc:identifier>
  <dc:language xsitype="RFC3066">en</dc:language>
  <dc:publisher>ALA Editions</dc:publisher>
  <dcterms:audience>Catalogers</dcterms:audience>
</metadata>
```
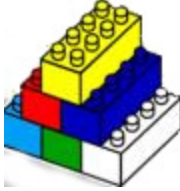
22

This is a record for the same object as the simple DC record.

Title is in English, that's what the xml:lang attribute for the title element refers to.

The subject headings came from LCSH, other subject elements are from LCC, DDC

<extent> is a refinement of <format>. DC does not include hierarchy in its expression. Your XML schema makes the connection between elements and refinements (ex: <extent> is a refinement of <format>).

Lego Model replaced by RDF

Combining element sets using the Resource
Description Framework (RDF), Semantic Web

Container

Package
Dublin Core

Package
MARC record

URI

Package
Terms and Conditions

Package
Indirect Reference

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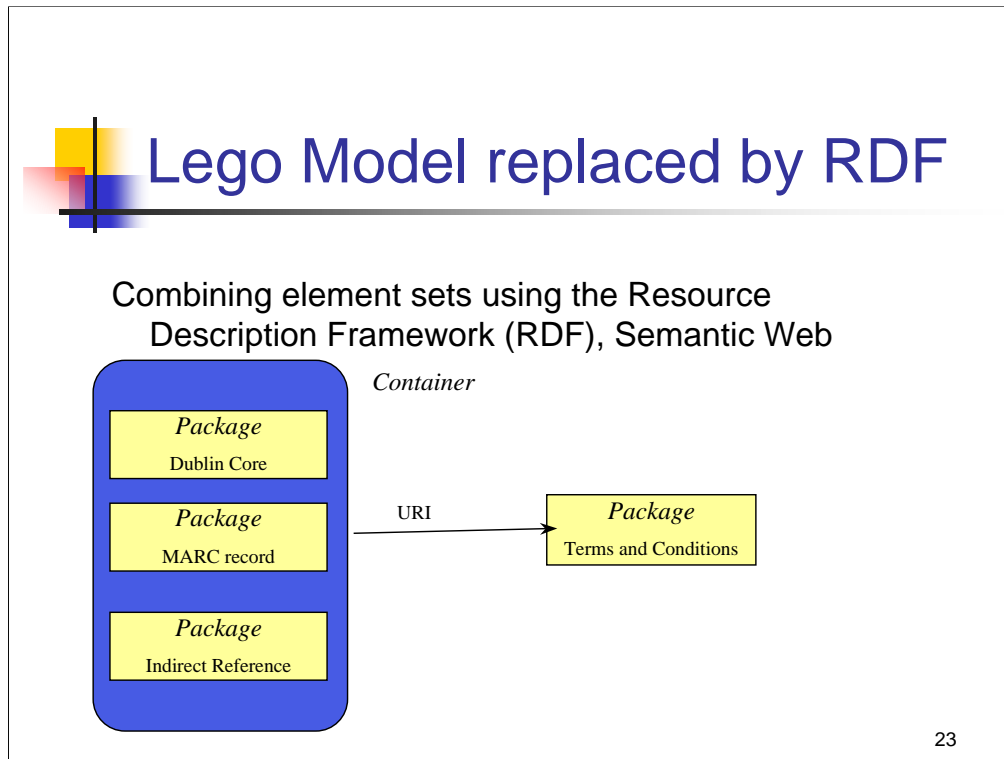
Resource Description Framework (RDF)

The basic language for writing metadata; a foundation which provides a
robust flexible architecture for processing metadata on the Internet. RDF will
retain the capability to exchange metadata between application communities,
while allowing each community to define and use the metadata that best
serves their needs. For more information see http://www.w3.org/RDF/

Extensible Markup Language (XML)

A subset of Standard Generalized Markup Language (SGML), a widely used
international text processing standard. XML is being designed to bring the
power and flexibility of generic SGML to the Web, while maintaining
interoperability with full SGML and HTML. For more information, see
http://www.w3.org/XML/

Advantages of Dublin Core

- Less rigorous content rules
- Easier to train and implement
- Allows OAI harvesting of metadata
- Supported by digital library products:
    - ContentDM
    - Encompass
    - MetaSource

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Disadvantages to Dublin Core

- Lack of granularity may not support specific community needs
- Lack of granularity makes its role as a switching language between standards limited
- No fields are required and lack of consistent training can hamper interoperability

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QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

What is MODS?

Descriptive metadata standard

- Initiative of Network Development and MARC Standards Office at LC
- A derivative of MARC21
  - Documentation refers to MARC definitions for most properties
  - Descriptive metadata encoded in an XML schema
  - Uses textual rather than numeric tags
- Originally designed for library applications, but may be used for others
- Uses XML Schema (METS)

http://www.loc.gov/standards/mods/   26

Implementation began late 2002 Version 3.0 includes corrections and citation information for journal article

MODS uses a subset of MARC elements. Elements have been added that were not originally in MARC21.

The development of MODS is not driven by a consensus group, as it is with DC.

Notice also that MODS uses English textual tags instead of the numeric tags used by MARC. This seems to have been done without much thought of implications for international use.

MODS was developed primarily for bibliographic entities.

MODS now includes affiliation under <name>.

Why MODS ?

- XML (Extensible Markup Language) is the markup for the Web
- Library community need for a element set simpler but compatible with MARC that could be transmitted in XML
- A standardized framework for holding and exchanging metadata: analogous to the MARC record, for re-use of pre-existing information
- Designed for complex digital library objects
- Dublin Core not sufficient; e.g., need to express role of creator
- Provide a more explicit means of expressing different categories of dates in machine-readable forms

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MODS elements

- Title Info
- Name
- Type of resource
- Genre
- Origin Info
- Language
- Physical description
- Abstract
- Table of contents
- Target audience
- Note

- Subject
- Classification
- Related item
- Identifier
- Location
- Access conditions
- Extension
- Record Info
- Root elements:
  - mods (A single MODS record
  - **modsCollection** (A collection of MODS records))

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Higher level genre terms

Elements semantically the same as MARC but there is no assumptions of cataloging rules

Country state city hierarchy for location that is subfielded
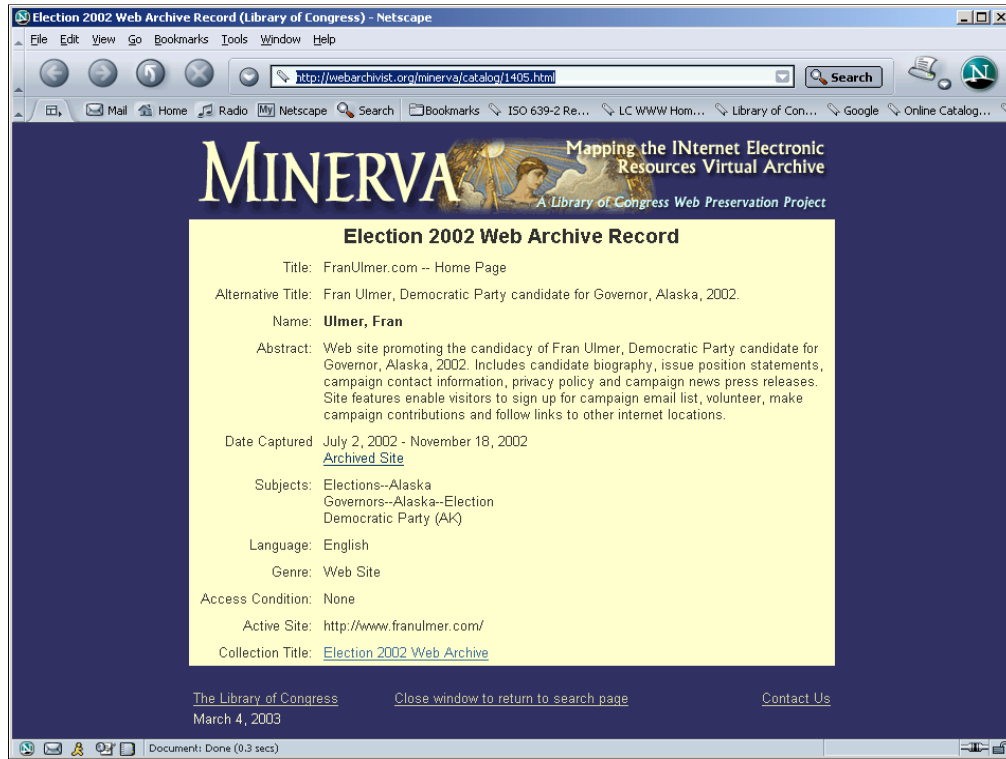
MINERVA: LC's web archiving project (based on specific themes)

Exploring issues with born digital resources

MODS used for descriptive metadata

Election 2002 Web archive

  Collaboration with Internet Archive, Webarchivist.org

  Selective collection of archived sites July-Nov. 2002

  MODS records for each site

Fields used in Minerva project

- Title
- Alternative title
- Name (structured form)
- Abstract
- Date captured
- Genre (value always "Web site")

- Physical description (file formats)
- Identifier (base URL)
- Language
- Access conditions/rights management
- Subject (keyword or LCSH if possible)

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Advantages of *MODS*

- Uses language-based tags; fully uses Unicode character set
- Allows the aggregation of multilingual records
- Elements generally inherit semantics of MARC but does not assume the use of any specific rules for description
- Element set is more compatible with existing descriptions than ONIX or Dublin Core
- Elements particularly applicable to digital resources
- XML schema allows for flexibility and availability of freely available software tools

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American Memory uses for early american periodical project

Disadvantages of *MODS*

- Library-centric
- Not widely adopted by other libraries or other communities

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Ex.: MODS

```
<titleInfo>
    <title>Cataloging cultural objects. /</title>
</titleInfo>
<name type="personal">
    <namePart type="family">Baca,</namePart>
    <namePart type="given">Murtha),</namePart>
    <namePart type="date">1951-</namePart>
    <role>
        <roleTerm type="text">editor</roleTerm>
    </role>
</name>
<name type="personal">
    <namePart type="family">Harpring,</namePart>
    <namePart type="given">Patricia.</namePart>
    <role>
        <roleTerm type="text">editor</roleTerm>
    </role>
</name>
```

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This is only a snippet of a MODS record, it goes on for several screens.

Note the use of role term (also a new feature of DC)

More MODS

```
<typeOfResource>text</typeOfResource>
<genre authority="marc">book</genre>
<originInfo>
    <place>
        <placeTerm authority="marccountry" type="code">ilu</placeTerm>
    </place>
    <place>
        <placeTerm type="text">Chicago</placeTerm>
    </place>
    <publisher>ALA Editions</publisher>
    <dateIssued>2006</dateIssued>
    <issuance>monographic</issuance>
</originInfo>
<language>
    <languageTerm authority="iso639-2b" type="code">eng</languageTerm>
</language>
```

34

Notice the <issuance> element, denoting that this item is monographic.

VRA Core Categories for Visual Resources

- Developed by the Visual Resources Association, the VRA Standards Committee
- Designed specifically for visual resources
- Viewed as a means to share cataloging of visual materials
- Provides access to digitized images and their description

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VRA Metadata Elements

- Based on CDWA for category definitions and recommendations for controlled vocabulary
- Two types of elements
  - Work
  - Images
- Like DC, all fields are repeatable
- Unlike DC, all are mandatory if applicable

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Work is a physical entity tht exists: painting, music, performance. May be a single item or many parts

Image is a visual representation of a work, including a digital version

Best practices for each element includes:

- Indication of qualifiers
- Definition
- Data values (suggested controlled vocabulary)
- Mapping to version 2.0
- Mapping to Dublin Core
- Mapping to CDWA
- Comments

Suggested standards include:

- AACR2
- AAT
- CDWA
- LCSH
- LCTGM
- TGN

VRA 4.0 Elements

- Work, Collection or Image
- Work Type
- Title
- Measurements
- Material
- Technique
- Agent
- Date
- Subject
- Relation

- Location REFID
- Text REF
- Style/Period
- Agent.Culture / Cultural Context
- Description
- Source
- Rights
- Inscription
- State Edition

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Agent = Creator

Location REFID

Text REF (an ID not associated with holding institution)

VRA Data Values

- LCSH
- AAT
- TGN
- ULAN

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Online Information Exchange (ONIX)

Designed by publishing industry (American Association of Publishers) to exchange information about "books" with wholesalers, retail, e-tail booksellers.

- Standard for data exchange
- Richer information for online bookstores

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ONIX Integrated with MARC Records?

CC:DA Task on ONIX International charge with reviewing the standard and assessing the impact if integrated

http://www.ala.org/alcts/organization/ccs/ccda/tf-onix1.html

40

Committee on Cataloging: Description and Access (ALCTS committee with ALA)

Comparison of ONIX & MARC

- ONIX has finer granularity than MARC
- Fields can be mapped from ONIX into UNIMARC, but can not be reconverted
- Each application contains fields that are relevant to only themselves
- ONIX records provide enriching information: reviews, abstracts,TOC, prizes won, credentials of authors

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ONIX: height, width, depth, weight type of packing for shipping

Price Composite; rights/distribution to different countries; Out of Print Date

ONIX/MARC Crosswalks

- ONIX (1.0) to UNIMARC Crosswalk developed by Library of Congress
  http://lcweb.loc.gov/marc/onix2marc.htlml

- Mapping by Bob Pearson (OCLC)
  http://222.editeur.org/ONIX_MARC_Mapping_External.doc

- Report by Alan Danskin
  http://bic.org.uk/reporton.doc

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ONIX Metadata Standard

Allows two levels of description:

- Level 2:
  - 235 elements of information in 24 categories
  - Requires XML DTD
- Level 1:
  - Not all the categories, 82 elements
  - Does not require XML DTD

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Level 1 designed for publishers without an in-house information management database

UK/US have slightly different core elements (45 considered core)

ONIX for Books

- Originally devised to simplify the provision of book product information to online retailers (name stood for ONline Information eXchange)

- First version flat XML, second version included hierarchy and elements repeated within 'composites'

- Maintained by Editeur, with the the Book Industry Study Group (New York) and Book Industry Communication (London)

- Includes marketing and shipping oriented information: book jacket blurb and photos, full size and weight info, etc.

44

Briefly.

It's hard to map a second hierarchical version. ONIX includes a lot of marketing text and information helpful to shipping, e.g., taxes in different jurisdictions, height and weight.

Ex.: ONIX

```
<Title>
<TitleType>01</TitleType>
<TitleText textcase = "02">British English, A to Zed</TitleText>
</Title>
<Contributor>
<SequenceNumber>1</SequenceNumber>
<ContributorRole>A01</ContributorRole>
<PersonNameInverted>Schur, Norman W</PersonNameInverted>
<BiographicalNote>A Harvard graduate in Latin and Italian literature,
Norman Schur attended the University of Rome and the Sorbonne before
returning to the United States to study law at Harvard and Columbia
Law  Schools. Now retired from legal practise, Mr Schur is a fluent
speaker and writer of both British and American
English.</BiographicalNote>
 </Contributor>
```

45

Note the encoded values (TitleType, SequenceNumber, ContributorRole).
Hard to figure out the encoding without looking it up (same for MARC). This
information is all in one, big package.

Ex.: ONIX

```
<othertext>
<d102>01</d102>
<d104>BRITISH ENGLISH, A TO ZED is the thoroughly updated, revised, and
expanded third edition of Norman Schur's highly acclaimed transatlantic dictionary
for English speakers. First published as BRITISH SELF-TAUGHT and then as
ENGLISH ENGLISH, this collection of Briticisms for Americans, and Americanisms
for the British, is a scholarly yet witty lexicon, combining definitions with
commentary on the most frequently used and some lesser known words and
phrases. Highly readable, it's a snip of a book, and one that sorts out – through
comments in American – the "Queen's English" – confounding as it may
seem.</d104>
</othertext>
<othertext>
<d102>08</d102>
<d104>Norman Schur is without doubt the outstanding authority on the similarities
and differences between British and American English. BRITISH ENGLISH, A TO
ZED attests not only to his expertise, but also to his undiminished powers to inform,
amuse and entertain. – Laurence Urdang, Editor, VERBATIM, The Language
Quarterly, Spring 1988 </d104>
</othertext>
```
46

Numeric tags get away from language limitations.

Yellow bubbles tell you what the codes mean.

EAD -- Encoded Archival Description

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Learning Object Metadata

- An array of related standards for description of 'learning objects' or 'learning resources'

- Most based on efforts of the IEEE LTSC (Institute of Electrical and Electronics Engineers Learning Technology Standards Committee) and the IMS Global Learning Consortium, inc.

- Tends to be very complex with few implementations outside of government and industry

- One well-documented implementation is CanCore

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This standard was developed by IEEE.

The IMS Global Learning Consortium is a sort of spin-off.

Look at the CanCore implementation, which is really one of the few IEEE-LOM that we can examine. Usage of IEEE-LOM tends to be in closed government sites, for example, Army training manuals.

IEEE-LOM is very rich in its way, but it's a real commitment.

NISO Metadata for Images in XML Schema
Technical Metadata for Digital Still Images Standard
Official Web Site

The Library of Congress' Network Development and MARC Standards Office, in partnership with the NISO Technical Metadata for Digital Still Images Standards Committee and other interested experts, is developing an XML schema for a set of technical data elements required to manage digital image collections. The schema provides a format for interchange and/or storage of the data specified in the NISO Draft Standard Data Dictionary: Technical Metadata for Digital Still Images (Version 1.2). This schema is currently in draft status and is being referred to as "NISO Metadata for Images in XML (NISO MIX)". MIX is expressed using the XML schema language of the World Wide Web Consortium. MIX is maintained for NISO by the Network Development and MARC Standards Office of the Library of Congress with input from users.

This is a DRAFT for review and trial use: Please send comments on draft 0.2 to the MIX Listserv (described below)

XML schema for a set of technical data elements required
to manage digital image collections
http://www.loc.gov/standards/mix/

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TEI -- Text Encoding Initiative

Text Encoding Initiative

Welcome to the TEI Website

News flash!

4th Annual Members Meeting

to be held 22-23 October 2004 at Johns Hopkins University, Baltimore, USA.

In memoriam

Antonio Zampolli, 1937-2003

http://www.tei-c.org/

Initially launched in 1987, the TEI is an international and interdisciplinary standard that helps libraries, museums, publishers, and individual scholars represent all kinds of literary and linguistic texts for online research and teaching, using an encoding scheme that is maximally expressive and minimally obsolescent.

- **All about the TEI Consortium**: describes the organization and constitution of the TEI Consortium
- **How to participate**: provides information on how projects institutions and individuals can play an active part in development and maintenance of the standard
- **The TEI Guidelines**: the chief deliverable of the TEI project: detailed recommendations for the encoding of all kinds of textual material of all kinds in all languages from all times
- **TEI Tutorials**: introductory and advanced teaching materials, presentations, and user case studies
- **TEI History**: archive of TEI publications and working papers
- **Projects using TEI**: pointers to live TEI applications and systems worldwide
- **Members only area**: links to current TEI activities, draft documents, discussion papers from workgroups, etc. : access restricted to current members only. (Forgotten your password? contact us for a reminder)
- **Just the FAQs**: quick answers to frequently asked questions about the TEI
- **TEI Software**: pointers to TEI specific and generic free software for exploiting the TEI scheme

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Scenario 1: Collaborative Oral History Project: Pioneers of the Great Plateau

Briefly summarize the issues involved in planning this specific project. Be sure to touch upon:

1st exercise

1. Scope and nature: who, what, where, when, why, how
2. Selection Process, problems with condition of the original material
3. Politics of working in a consortial arrangement

2nd exercise

4. Staffing
5. Hardware/software considerations
6. Standards, conversion issues
7. Creation and maintenance of the digital objects and accompanying metadata

Same three groups: what are the most important 5 issues that the institution will need to resolve? Use the communication techniques discussed earlier. Consider what criteria will be used to measure "success" and how to build in the quality to meet that success.

3rd exercise
        Practice writing the typical questions asked on grant applications. See the accompanying sheet.

4th exercise
    9. Assessment: how to gauge success. Consider what criteria will be used to measure "success" and how to build in the quality to meet that success

Scenario

Historical Society of [Western State], a member of the Consortia of the Great Plateau, plans to write a grant for $150,000.00 to fund the creation of a digital archive of the oral histories made of the original pioneers who settled in the Great Plateau at the turn of the century. The Consortia estimates that they have a total of 500 oral histories of the founders of the Plateau, with another 5,000 documents supporting the oral histories (letters, maps, photographs, newspaper clippings from 1900-1933, brochures, postcards). The Consortia consists of the State Historical Society and six historical societies that support the local communities of the Great Plateau. Four historical societies are managed by volunteers who provide access to their materials on a limited basis (weekends and some holidays). The State Historical Society of [Western State] and the Historical Society of Mountain Pass is supported/managed by state and local government. The State Historical Society has 6 paid employees: a director, 2 curators, 2 museum registrars/technicians, and 1 secretary. The Historical Society of Mountain Pass has a director/curator, a secretary, and two assistants who provide guided tours for schools and the general public. The collections of the volunteer historical societies represent about 35% of the total estimated material. The State Historical Society has 40% and the Historical Society of Mountain Pass has the remaining 25% of the material. The original oral histories are a mix of media types and states of preservation. In some cases, only the written transcript remains accessible.

Team members: select someone to serve as spokesperson for the team and one to record the decisions (may rotate for each exercise). Each team member will be given a role (random selection -- a slip will be in the notebook): administrator, systems director, curator, and cataloger)

Scenario 2: Charles Dickens collection

Briefly summarize the issues involved in planning this specific project. Be sure to touch upon:

1st exercise

    1. Scope and nature: who, what, where, when, why, how
    2. Selection Process, problems with condition of the original material
    3. Politics of working in a consortial arrangement

2nd exercise

    4. Staffing
    5. Hardware/software considerations
    6. Standards, conversion issues
    7. Creation and maintenance of the digital objects and accompanying metadata

    Same three groups: what are the most important 5 issues that the institution will need to resolve? Use the communication techniques discussed earlier. Consider what criteria will be used to measure "success" and how to build in the quality to meet that success.

3rd exercise
    Practice writing the typical questions asked on grant applications. See the accompanying sheet.

4th exercise
    8. Assessment: how to gauge success. Consider what criteria will be used to measure "success" and how to build in the quality to meet that success

Scenario

University of Midwest is a private mid-sized university who received 5 years ago a major archival gift from the endowed chair of the English Department. The archives include her extensive collection of works by Charles Dickens and works based on the original works. The collection includes 1st editions of the books, some newspaper clippings in album of the serialization as the novels first appeared, subsequent materials adapted by others based on the works of Charles Dickens: scores to songs, musical scores, children's editions, prints (illustrations), as well as modern books on tape, film versions of the novels (reel-to-reel, videos and DVDs), three dimensional objects (glass figurines, music boxes…). The collection also includes scholarly and popular works about Charles Dickens and his works. The University plans to digitize much of the work for which there a few originals. The intention is to develop curriculum packages that would support K-12 education as well the University courses on nineteenth-century literature. The Special Collections curator has a reading room supervisor and one staff member to help process material. The University has a Systems Librarian and a web developer on staff. Technical Services has 3 professional catalogers and 15 paraprofessionals in cataloging, acquisitions and processing. They are excited about the project but are worried about the impact on the workflow. They do not have a backlog and hope to maintain that trend.

    Team members: select someone to serve as spokesperson for the team and one to record the decisions (may rotate for each exercise). Each team member will be given a role (random selection--a slip will be in the notebook): administrator, systems director, curator, cataloger)

Scenario 3: Digitization of Local Newspapers

Briefly summarize the issues involved in planning this specific project. Be sure to touch upon:

1st exercise

1. Scope and nature: who, what, where, when, why, how
2. Selection Process, problems with condition of the original material
3. Politics of working in a consortial arrangement

2nd exercise

4. Staffing
5. Hardware/software considerations
6. Standards, conversion issues
7. Creation and maintenance of the digital objects and accompanying metadata

   Same three groups: what are the most important 5 issues that the institution will need to resolve? Use the communication techniques discussed earlier. Consider what criteria will be used to measure "success" and how to build in the quality to meet that success.

3rd exercise
        Practice writing the typical questions asked on grant applications. See the accompanying sheet.

4th exercise
    9. Assessment: how to gauge success. Consider what criteria will be used to measure "success" and how to build in the quality to meet that success.

Scenario

The University of the Northeast is an ARL library with a significant microfilm collection of local neighborhood newspapers that are a rich primary resource for history, political science, urban studies, geography, economics, and population studies. The University has become aware that two other colleges in the state have similar collections that complement their holdings. In all they have 5,000 reels of microfilm. The collection dates from the period of the American Revolution up to 1965 at which point most of the regional newspapers were absorbed by large newspaper conglomerates or just faded away. The intention is to provide access to this primary resource for curriculum needs of K-12 as well as higher education and researchers. The University of the Northeast has 1 systems librarian and 3 programmers on staff; however, they are also responsible for all the open labs on campus. Their Technical Services department is in the process of reorganizing after migrating to a new ILS. The other 2 colleges only have 1 systems librarian each. Their Technical Services departments only have 2 professional librarians and 12 paraprofessionals in cataloging and acquisitions. Librarians and staff at U.N. feel that they can absorb the project with the new ILS making their current work more efficient.

   Team members: select someone to serve as spokesperson for the team and one to record the decisions (may rotate for each exercise). Each team member will be given a role (random selection -- a slip will be in the notebook): administrator, systems director, "curator," and cataloger)

Steps for Developing a Plan for Digital Projects

Analysis

Mission
       Mission statement of Institution
Strategic Plan
       Goals and objectives of Institution
             Ongoing
             Short-term
Internal Constraints
             Library mandates
             Library limitations (staff, budget, space)
SWOT analysis (Strengths – Weaknesses – Opportunities – Threats)

Planning

Stakeholder analysis
             Faculty and students, K-12
             Librarians and library staff
             Institution
             Wider community (environmental scan)
Business Plan
             Assumptions
             Needs analysis
             Benefits and solutions
             Actions that tie project to the mission and strategic plan
             Impact analysis: costs; personnel, hardware/software, space; processing
             Marketing
             Sustainability
             Timelines

Implementation

Plan of Operation
             Details of workflow for each project: documentation
             Training
             Selection

Copyright	Contextualization
Donor restrictions	Added value
Privacy issues	Condition
Value	

             Preparation
             Digitization
             Metadata creation
             Web page support

Evaluation

Vision for success
             Measure of success

Common Abbreviations

AACR2
    Anglo-American Cataloging Rules, Version 2

AAT
    Art and Architecture Thesaurus

ADA
    Americans with Disabilities Act

CCO
    Cataloging Cultural Objects

CDWA
    Categories for the Description of Works of Art

DACS
    Describing Archives: A Content Standard

DC
    Dublin Core Metadata Standard

DCMI
    Dublin Core Metadata Initiative

EAD
    Encoded Archival Descriptions

LCAF
    Library of Congress Authority File

LCSH
    Library of Congress Subject Headings

MARC
    MAchine-Readable Cataloging

MeSH
    Medical Subject Headings

METS
    Metadata Encoding and Transmission Standard

MODS
     Metadata Object Description Schema

ONIX
     ONline Information exchange

RDA
     Resource Description and Access

RDF
     Resource Description Framework

TGM
     Thesaurus of Graphical Materials

TGN
     Thesaurus of Geographical Names

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